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Analysis of Timing and Carburetion Calibrations

Aerospace Corp, El Segundo, Calif Mobile Systems Group

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ANALYSIS OF TIMING AND CARBURETION CALIBRATIONS

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16. ABSTRACT

This was a two-part study effort. In the first part, an evaluation was made of vehicle simulation computer programs to determine and select the best program for EPA use in conducting various analyses of automobile fuel economy and emissions effects. The programs considered were (1) a DOT simulation routine called VEHSIM, (2) a program developed by the University of Wisconsin, and (3) a program developed by The Aerospace Corporation. The DOT VEHSIM program was picked primarily because it provides exceptional flexibility and ease of operation, and because it appeared to be readily adaptable to modifications required for the analysis of timing and carburetion calibrations in part two of this study. The latter effort entailed the determination and calculation of factors representing the fuel economy influence of ignition timing and carburetor calibration differences in certification test vehicles. Using the VEHSIM program with auxiliary programs VSIMI and VSIMII, specific calculations were made for distributor and carburetor calibration curves representing equipment in 1976 model year cars.

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FOREWORD

This report, prepared by The Aerospace Corporation for the U.S. Environmental Protection Agency (EPA), Emission Control Technology Division, presents the results of a two-part study involving (1) the selection of a suitable digital computer simulation program for EPA use in conducting various analyses of automobile fuel economy and emission effects, and (2) the application of this program to the determination of factors representing the fuel economy influence of ignition timing and carburetor calibration differences in certification test vehicles.

This report is organized as follows. A synopsis of the study results is presented in the "Summary" section. Section 2 of the report identifies and compares the candidate computer simulation programs examined. A summary description of the program selected for EPA use is given in Section 3. The technique used in applying this program to the analysis of timing and carburetion calibration data is described in Section 4. Section 5 presents the numerical results of this analysis, including a list of fuel-weighted calibration factors for the 1976 certification test fleet. A complete description of the program elements adopted or developed for use in this computational effort is provided in Section 6.

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SUMMARY

This was a two-part study effort. In the first part, an evaluation was made of vehicle simulation computer programs to determine and select the best program for EPA use in conducting various analyses of automobile fuel economy and emission effects. The programs considered were: (1) a Department of Transportation (DOT) simulation routine called VEHSIM, (2) a program developed by the University of Wisconsin, and (3) a program developed by The Aerospace Corporation. Comparison of vehicle subsystem modeling details led to the conclusion that the computational differences among programs would not lead to significantly different simulation results. Therefore, other considerations dominated the decision concerning the choice of program for EPA use. The DOT VEHSIM program was picked because it computes in the preferred wheels-to-engine sequence, it provides exceptional flexibility and ease of operation, it is well documented, and it appeared to be readily adaptable to modifications required for the analysis of timing and carburetion calibrations in part two of this study.

Part two of this study entailed the determination and calculation of factors representing the fuel economy influence of ignition timing and carburetor calibration differences in certification test vehicles. Specific calculations were made for distributor and carburetor calibration curves representing equipment in 1976 model year cars. The approach taken in developing these fuel economy factors was as follows:

a. The fuel economy influence of the calibration characteristic was defined as the summation over the driving cycle of the product of the fuel fraction consumed in a given cycle segment and the value of the calibration parameter in that segment. This process produces a fuel-weighted, cycle average value of the calibration variable (spark advance, air-fuel ratio).

b. A set of reference vehicles representative of the current domestic new car fleet was selected. Computer simulation runs using these vehicles were made to develop cycle histories of engine operating conditions and vehicle fuel consumption to be used as a basis for evaluating and fuel-weighting the calibration variables.

c. Correction factors for adjusting these results to vehicles with weight, axle ratio, and/or transmission options different from those of the reference cases were developed by determining the sensitivity of the reference vehicle fuel-weighted factors to changes in these variables.

d. The data base of timing and carburetor calibration curves was sorted with respect to applicable reference vehicles. Applying the engine and vehicle parameters developed in b to these sets of calibration curves and using the appropriate correction factors developed in c, fuel-weighted spark advance and air-fuel ratio factors for the 1976 certification test fleet were determined.

To implement the approach described above, the capabilities of the DOT VEHSIM vehicle simulation program were extended as follows:

a. The VEHSIM program was modified to produce a magnetic tape output.

b. A new program, VSIMI, was developed to add air-flow rate to the VEHSIM output. It also computes fuel-weighted average air-to-fuel ratio and fuel-weighted average spark advance for the reference vehicle carburetion and timing characteristics.

c. A second new program, VSIMII, was developed to use the magnetic tape output from VSIMI and compute configuration-corrected fuel-weighted air-to-fuel ratio and fuel-weighted spark advance, in one computer run, for many distributor-carburetor combinations.

A complete description of the program elements adopted or developed for use in this computation is included in this report along with a listing of the fuel-weighted calibration factors calculated for the 1976 certification test fleet. A sample of the calculated results produced by the program is given in Table S-1, which shows the fuel-weighted calibration factors developed for the reference vehicle set.

Table S-1. Sample Program Results for Reference Vehicle Cases

Reference Vehicle Characteristics						Program Results			
						Weighted Advance		Weighted A/F Ratio	
Manufacturer	CID	IW	Tran.	Axle Ratio	N/V	Urban	Hwy.	Urban	Hwy.
-	400	5000	A	3.08	38.8	24.99	33.00	15.69	15.90
GMC	350	5000	A	3.08	38.8	23.54	31.48	15.56	15.86
Chrysler	318	4500	A	3.21	40.9	34.61	42.40	18.55	16.99
Chrysler	318	4500	M-3	3.21	40.9	33.88	41.84	19.02	17.03
AMC	258	4000	A	3.15	39.0	16.34	24.90	16.74	16.19
AMC	258	4000	M-3	3.15	39.0	15.02	23.75	16.27	16.23
Chrysler	225	3500	A	3.21	44.0	19.37	30.96	16.33	16.06
Chrysler	225	3500	M-3	3.21	44.0	18.99	30.65	16.41	16.11
GMC	140	3000	M-3	2.92	43.0	13.40	18.33	18.67	15.72
-	97.6	2500	M-4	3.70	56.5	17.37	19.90	18.00	15.62

SECTION 1

INTRODUCTION

The objectives of this study were twofold: to provide the Environmental Protection Agency (EPA) with a digital computer simulation capability for analyzing vehicle performance over specified driving cycles, and to conduct studies employing this vehicle simulation program to develop a data base of Federal Test Procedure (FTP) regime-weighted ignition timing and carburetion factors for use in EPA fuel economy regression analyses.

The first objective was to be met by the process of reviewing and evaluating several existing vehicle simulation programs and selecting the best program for general use in EPA analyses of automobile fuel economy and emissions effects. For the purpose of the present work effort, the selected computer program was employed in the determination of factors representing the fuel economy influence of ignition timing and carburetor calibration differences in certification test vehicles. Heretofore, it has not been possible to incorporate these engine timing and carburetion calibration effects into EPA fuel economy analyses because of the unavailability of algorithms to convert calibration maps into analytical variables suitable for regression and sensitivity analysis. The computer simulation was used to perform these conversions and to develop analytical variables data for subsequent EPA use.

SECTION 2

COMPARISON AND EVALUATION OF VEHICLE SIMULATION COMPUTER PROGRAMS FOR EPA USE

2.1 CANDIDATE PROGRAMS

The principal vehicle performance simulation programs considered in this study were developed by the U.S. Department of Transportation (DOT) and the University of Wisconsin (U/W). A third program, developed by The Aerospace Corporation, was also evaluated and was utilized to obtain baseline data for purposes of comparison and to provide background information regarding computational techniques and procedures. These programs are largely similar in that they perform closed-loop dynamic simulation of the overall vehicle drive train system, with engine and driveline components modeled in subroutines that can be accessed or suppressed as desired by the operator. The programs simulate steady-state driving, accelerations, and driving cycles, and their output options include hp, rpm, HC, CO, NO_x, and MPG (instantaneous and cumulative) parameters.

While displaying the above general similarities, the programs differ in a number of aspects, including design logic, use flexibility, subsystem modeling processes, output data, and specific computational features, as discussed in the following paragraphs.

2.2 COMPARISON OF PROGRAM FEATURES

The DOT and Aerospace programs compute in a wheels-to-engine sequence, whereas the U/W program follows the reverse order and utilizes a feedback routine to approximate the driving cycle requirements. Means of computing vary (e.g., data tables versus analytical expressions versus constants) and the rigor of simulation differs. A summary of the program features discussed in this section will be found in Table 2-1.

Table 2-1. Comparison of Simulation Program Features

ITEMS	DOT	U/W			A
Computing Features					
Direction of Solution	Wheels-to-engine	Engine-to-wheels			Wheels-to-engine
Single or Split Program	Single	Split: Vehicle simulation & perform. analysis			Single
Number of Routines		Vehicle Sim.	Perf. Anal.	Total	
Main	1	1	1	2	1
Primary Subroutines	6 19	14 30	2 10	16 40	4 12
Auxiliary Subroutines	12	15	7	22	7
Time per Solution	2-1/2 min. for EPA/Urban	2 min. for EPA/Urban			2.4 min. for EPA/Urban & Highway
Language	Fortran IV	Fortran II			Fortran IV
Computers Used	CDC 6600	Univac 1110, Xerox 9300			CDC 7600
Other Features or Claims	Off-line data conversion	Off-line data conversion			None
Readily Modified	Yes	So claimed			No
Documentation	Good	Good			Poor
Users	DOT	DOT; Shell Development, UCLA			Aerospace
Fuel Consumption					
Computation	Interpolation of fuel rate table	Interpolation of fuel rate table			Interpolation of specific fuel consumption table
Corrections for:					
Cold Operation	None	None			Constant fractional increase
Acceleration	None	None			Increase linear in acceleration to maximum value
Motoring	Specified as part of fuel rate table	None			Increase is function of actual & idle speed

Table 2-1. Comparison of Simulation Program Features (Continued)

ITEMS	DOT	U/W	A
Emissions			
Computation	Interpolation of emission tables substituted for fuel consumption tables	Interpolation of fuel consumption tables, followed by concurrent interpolation of emission tables	Concurrent interpolation of emission and sfc tables
Corrections for:			
Cold Operation	None	None	None
Acceleration	None	None	Empirical constants
Motoring	None	None	Empirical constants
Limitations	Steady-state effects only	Steady-state effects only	Emission constants specific to vehicle
Engine Mechanics	Up to 2 engines; purpose not stated	One engine	Up to two engines, for dual engine or dual displacement vehicles
Computation	Manifold vacuum & throttle opening are input functions of torque & rpm	Torque is input function of rpm & throttle opening; manifold vacuum is input function of torque & rpm	Manifold vacuum is function of power, where power is function of torque & rpm, fixed characteristic internal to program
Motoring Deceleration Treated	Yes	Yes	No
Temperature Effects Treated	No	No	No
Limitations	Tables must list percent throttle settings	--	--
Accessories			
Computation of Losses	Function of rpm	Function of rpm	Function of rpm
Transmission Pump Loss Considered	Not stated	Function of man. vacuum, engine & driveshaft rpm	No
Maximum Number	20	10	5
Inertia Effects Treated	Yes	Not stated	No
Transmission Types	Automatic or manual	Automatic	Automatic or manual

Table 2-1. Comparison of Simulation Program Features (Continued)

ITEMS	DOT	U/W	A
Torque Converter			
Computation	Tables of capacity, torque & speed ratios	Tables of capacity, torque & speed ratios	Tables of capacity, torque & speed ratios
Lockup Capability	Yes	Not stated	No
Motoring Characteristic	Tables differ from drive mode tables	Tables differ from drive mode tables	Tables same as drive mode tables
Losses	Implicit in model	Implicit in model	Implicit in model
Pump Inertia Treated	Yes	Yes	Lumped with engine inertia
Turbine Inertia Treated	Yes	Yes	Lumped with drive train inertia
Temperature Effects Treated	No	No	No
Gear Box			
Number of Gears	20 maximum	10 maximum	3/4 (automatic/manual)
Upshift Criteria	Manual: not stated Auto: function of rpm or mph, vac. or throttle	Function of driveshaft rpm & manifold vacuum	Auto: function of rpm & vacuum Manual: function of mph
Power Downshift Criteria	Function arbitrarily spaced from upshift pattern	Function arbitrarily spaced from upshift pattern	Wide-open throttle (zero vacuum)
Coast Downshift Criteria	Not stated	From present gear to first gear	Same as upshift but with test on acceleration
Shifting Transient	0.5-sec transition; interpolation not stated	0.5-sec linear transition	Instantaneous
Losses	Constant efficiency for each gear	Function of rpm, torque, direction for 3 gears	Constant efficiency for each gear
Inertias	Value for each gear	Value for each gear	One value, lumped with drive train
Temperature Effects Treated	No	No	No
Driveshaft & Universal Joints			
Losses Treated	Not stated	Not stated	No
Inertias Treated	Yes	Not stated	Lumped with drive train

Table 2-1. Comparison of Simulation Program Features (Continued)

ITEMS	DOT	U/W	A
Rear Axle Gears			
Losses	Constant efficiency	Function of rpm & torque	Constant efficiency
Inertias Treated	Yes	Yes	Lumped with drive train
Temperature Effects Treated	No	No	No
Rear Axles & Wheel Bearing			
Losses Treated	Not stated	Not stated	No
Inertia Treated	Not stated	Not stated	Lumped with drive train
Rear Wheels & Tires			
Slippage Treated	No	No	No
Acceleration Effects	Not treated	Tests for spinning ΔCG treated	Not treated
Deceleration Effects	Not treated	Tests for skidding (if braked)	Not treated
Inertias Treated	Yes	Yes	Lumped with drive train
Tire Growth Treated	No	Function of velocity	No
Front Wheel Inertia Treated	Yes	Not stated	No
Rolling Friction	Function of weight & velocity	Function of weight & velocity	Function of weight, tire pressure & velocity squared
Aerodynamic Losses	Function of area, vehicle & wind velocities	Function of area, vehicle & wind velocities	Function of area, vehicle & wind velocities
Grade Variations Treated	Yes: input function of cycle mileage	Yes: presently allows for constant grade only	Yes: presently allows for constant grade only
Output Data	Complete	Complete	Limited
Engine Vacuum	Yes	No	No
Inst. mpg	Yes	Yes	No
Cum. mpg	Yes	Yes	No

Table 2-1. Comparison of Simulation Program Features (Concluded)

ITEMS	DOT	U/W	A
Vehicle Parameter Display	Highly flexible. With limit Print On, gives first order vehicle, engine & fuel information	Complete: vehicle, torque converter, transmission, tire, and drive shaft	Not provided
Summary Calculations			
Schedule Averages	Fuel economy, work per mile, average SFC, average speed	Fuel economy	Fuel economy
Totals	Time, distance, energy, fuel-total and percent cruise, accel., decel., idle, brakes	Energy, % time in each gear	No
Energy Summary	Engine, kinetic, potential rotating	No	No
Energy Distribution	Accessories, torque converter, gear box, etc.	Torque converter, engine to rear wheels, road load, braking	No

All three programs are designed to determine the variation of engine performance (torque, speed, power) required to propel a vehicle through a specified driving cycle and compute the corresponding fuel consumption. The U/W and Aerospace programs also compute exhaust emissions concurrently whereas the DOT program can perform these computations only one at a time in sequence, by substituting emission data for fuel consumption data. Thus, the DOT program, as presently written, must be executed four times with different data inputs in order to determine fuel consumption and HC, CO, and NO_x emissions for a single simulation.

Both the DOT and Aerospace programs perform all computations in a single program. The U/W program provides somewhat greater flexibility by permitting the performance parameters (fuel consumption and exhaust emissions) to be computed separately from the vehicle simulation. The U/W program also utilizes a greater number of routines. The number of primary subroutines indicated in Table 2-1 refers to those program elements which compute vehicle characteristics. Auxiliary subroutines perform program control, input, output, and similar functions. The Aerospace program is apparently faster in that it executes both highway and urban cycles in about the same time the other programs execute only the urban cycle. Finally, the DOT and U/W programs include a capability for off-line data conversion of specific fuel consumption data to fuel flow rate data.

The three programs are similar in that they determine fuel consumption by interpolating input tables rather than by solving analytic expressions. The DOT program can handle motoring fuel consumption only if the required data are furnished as part of the basic engine data. As discussed above, emissions are computed concurrently only in the U/W and Aerospace programs, and additional separate runs with emissions data substituted for fuel rate data are required in the DOT program. All such computations are limited to steady-state effects.

Both the DOT and Aerospace programs permit up to two engines to be treated in a single run. This feature can be used, for example, to evaluate the performance of advanced engine configurations employing dual-displacement operation to achieve maximum fuel economy at low load conditions. None of the programs develops manifold vacuum data as a function of engine operating conditions. Manifold vacuum (and throttle setting in the DOT program) are input functions. These are expressed in terms of engine torque and speed in the DOT and Aerospace programs because of the wheels-to-engine computation sequence. Torque is input as a function of throttle setting and engine speed in the U/W program. The vacuum data are not an output option in the Aerospace program. The DOT program must have throttle settings provided in the data; however, this information is not used in executing vehicle control logic.

Accessory power losses are computed as functions of speed in all three programs. Only the U/W program includes front transmission pump losses, and only the DOT program accounts for accessory inertia in computing acceleration and deceleration.

Both the DOT and Aerospace programs can treat manual as well as automatic transmissions. With automatic transmissions, the characteristics of the torque converters are related by tables of capacity factor and torque and speed ratios. The DOT program can lock up (impose unity speed and torque ratios) in specified gears to simulate some advanced transmission models currently under study. Both the DOT and U/W programs provide for different torque characteristics in motoring deceleration. The Aerospace program utilizes a special algorithm to simulate fuel consumption effects in motoring deceleration.

The programs also differ substantially in the treatment of gearbox performance. The Aerospace program presently provides only three gears for the automatic transmission and four for the manual while the other programs permit up to 10 or 20 gears. The upshift and downshift criteria also differ, partially to avoid "stuttering" during computation. The Aerospace program assumes an instantaneous shift, which is somewhat unrealistic. However, the net effect on simulation accuracy is probably small. The other programs provide for a 0.5-second gearshift transition. The U/W program performs a linear interpolation between initial and final gear ratios in this period, but the DOT program algorithm is not stated. Finally, the programs differ in the modeling of gear friction losses and inertias, as indicated in Table 2-1.

Differences exist in modeling the inertias and friction losses in the remainder of the drive train, but this may not be of great consequence to net modeling accuracy. Modeling of the response of the driveshaft, universal joints, rear axles, and wheel bearings are either not mentioned in the reports or are lumped with other drive train components. The U/W program contains the most rigorous modeling of rear axle gear losses; the net effect on program results is probably small, but is unknown. The U/W program also performs the most thorough analysis of tire growth and slippage effects. The DOT program does not discuss tire slippage, but provides for an increase in engine torque due to tire inefficiencies.

Front wheel inertia is known to be treated only in the DOT program, but the net effect is probably minimal. All three programs treat rolling friction, aerodynamic drag losses, and changes of highway grade, but only the DOT program presently provides for the convenient input of grade as a function of cycle mileage.

With regard to output data, the Aerospace program is relatively limited, and only the DOT program provides manifold vacuum in the output. The Aerospace program does not provide instantaneous or cumulative mpg, though it does generate instantaneous emission quantities.

A summary display of simulation parameters is not provided in the Aerospace output. The U/W program generates a rather extensive list of the simulation inputs, while the DOT program provides an adequate summary. It may be noted that a more complete list of the data input to the DOT program is easily obtained by operating in the Limit Print Off mode, thereby displaying the contents of the "parts file."

As indicated in Table 2-1, the DOT program produces a rather extensive set of summary calculations covering performance and schedule parameter averages and totals as well as energy quantities. Neither the U/W nor Aerospace programs are presently programmed to produce these quantities.

2.3 SELECTION OF PROGRAM FOR EPA USE

Comparison and evaluation of the engineering aspects of the several programs under consideration led to the conclusion that the computational differences indicated in Table 2-1 would not result in significantly different simulation results. This was confirmed in a test run of the DOT program, yielding an urban cycle fuel economy only 6 percent different from that given by the Aerospace program.

Of the three programs examined, the Aerospace program was evaluated to be the least desirable for EPA use because of such factors as its lack of documentation, its restricted treatment of transmission effects, and its limited features related to summary calculations and the display of data. Most importantly, the program did not internally compute and store all of the information required to compute the regime weighted air-fuel ratios and spark advance required in this study. Major program modifications would have been required to incorporate the required changes. Additional changes would have been required to include the capability of accommodating manual transmissions with more than one set of gear ratios. These changes were not justified in view of the existing capabilities of the DOT and U/W programs.

With regard to the choice between the DOT and U/W programs, it was established that the DOT program had several significant advantages, namely:

a. The DOT program computes in the preferred wheels-to-engine sequence used in other programs and in much of the literature, whereas the University of Wisconsin program requires a feedback routine from engine to wheels to follow the driving cycle.

b. The DOT program is readily modified to provide the required capability to compute fuel-weighted spark advance over the driving cycle.

c. The DOT program provides exceptional flexibility and ease of operation.

Although the DOT program does not have the capability to compute exhaust emissions and fuel consumption parameters concurrently (as does the Aerospace program), the flexibility noted in item c above readily permits the necessary modification to effect a split-program performance analysis computation similar to the U/W program. This would allow the emission parameters to be generated external to the main program, using either a serial or concurrent computational approach for the individual pollutants.

On the basis of the considerations discussed above, the DOT (VEHSIM) program was selected for EPA use. Following this decision, several modifications were made to implement the analysis of timing and carburetion calibrations, including the addition of an auxiliary program to provide the split program feature mentioned above. These modifications will be discussed in detail in Sections 3 and 6. No other features contained in the Aerospace or U/W programs are recommended for immediate adaptation to the DOT program for EPA use.

SECTION 3

SUMMARY DESCRIPTION OF DOT VEHSIM PROGRAM

3.1 INTRODUCTION

The DOT Vehicle Performance Simulation Computer Model (VEHSIM) is a program that simulates the performance and fuel economy characteristics of a motor vehicle as it executes a given driving schedule. Particular consideration is given to determining where and when, during the schedule, energy is consumed.

VEHSIM also provides the user with a convenient way to evaluate the individual vehicle components (i.e., engine, torque converter, drag coefficient, weight, etc.) and to determine their effects on the fuel consumption of the vehicle. Also, detailed analyses and monitoring, both qualitative and quantitative, of various driving schedules may be made.

VEHSIM was designed for execution on the Control Data Corporation (CDC) 6600 Scope Operating System. However, it is programmed in the FORTRAN IV compiler language and should convert to other systems readily with only minor modifications. The VEHSIM program has been converted to the Aerospace CDC 7600 computer and is currently on tape. This program is generally run by first creating a data tape, then using the program to read selected items (e.g., engine, vehicle, and driving schedule) from the data tape and performing a vehicle simulation over a specified driving cycle.

This program has been used by DOT principally for computations of motor vehicle performance and fuel economy and to measure the effects of vehicle components on fuel consumption.

3.2 SIMULATION TECHNIQUE

The basic analytical technique used is rather straightforward. At any given time step, the acceleration and velocity of the vehicle is specified. From these, the horsepower in terms of torque and rpm, needed at the wheels, is computed and is then translated to the engine by way of the differential, gear box, and torque converter. After losses to accessories, rotating inertias, tires, etc. are computed, the output state in terms of torque and rpm of the engine is known. At this point an interpolation of the engine map is performed and fuel flow rate, manifold vacuum, and throttle setting are determined.

If it is found that more torque is required of the engine than it can produce at speed, the tractive force at the wheel is adjusted to a limit value. This would correspond to a 100-percent wide-open throttle condition. Should less power than the minimum engine output be required, as in a coast-down condition, the engine would assume a minimum throttle setting.

Most of the computations involved in determining engine operating conditions from road power requirement at the wheels are simple and direct. However, in the case of the accessories, a linear interpolation of a torque versus rpm map is performed for each accessory. An interpolation is also needed for the torque converter, but in this case tables of speed ratio and torque ratio versus output capacity factor are used. (Note: In the coast condition, only speed ratio is computed since the torque ratio is always unity.)

Upon determining the engine output speed and torque, a double linear interpolation of the engine map is performed. First the speed point is determined by interpolating between the two closest given speeds. If this speed is off the map, the highest (or lowest) two speed points are projected linearly to determine the slope for other engine parameters. If the speed is below engine minimum (idle speed), it is set to that minimum. Another interpolation is performed to find the torque setting at each of the two speed points. From these two values the true engine state is computed by using the speed slope already determined.

A number of accumulators are present in the program that keep track of where (accessories, drag, etc.) and when (cruise, idle, acceleration, or deceleration) the energy losses occur during the entire simulation. The totals are printed at the end of the driving cycle as the percent of engine horsepower-hours to assist the user in determining the relative effects of these parameters on fuel economy and performance.

Additional information and detailed user instructions, source listing, and samples can be obtained from A Computer Program (VEHSIM) for Highway Vehicle Fuel Economy, Performance, and Other Parameters, which was prepared for the National Highway Traffic Administration and Office of the Secretary, U.S. Department of Transportation (Ref. 1).

3.3 GENERAL CAPABILITIES

The VEHSIM program can be used to monitor emissions instead of fuel consumption. In this case, emission levels instead of fuel flow are entered with the engine data. However, only one type of emission can be simulated per run. DOT reports that the results they have obtained from using the program for emissions simulation have shown a substantial range of accuracy for different emissions and no longer employs the program for this use. Relative to EPA certification data, the program simulates NO_x within 10 percent, CO within 50 to 100 percent, and HC within 50 to 100 percent.

The VEHSIM program can accept engine data in any of three units of fuel flow (pounds/hour, brake specific fuel consumption [BSFC], gallons/hour), three units of load point (brake mean effective pressure [BMEP], torque, horsepower) and two units of speed points (rpm, piston speed). All input engine data are converted by the program to rpm, torque, and pounds/hour. The program computes, for each segment of the driving schedule, cumulative time and distance, velocity, acceleration, instantaneous and cumulative mpg, BSFC, rpm, torque, vacuum, and percent of wide-open throttle.

3.4 AEROSPACE MODIFICATIONS

The VEHSIM program has been modified in several ways during its use at Aerospace. First, the original program constraint of a maximum of 200 segments for a driving schedule has been increased to 2000 segments. This change has permitted the program to be run using a second-by-second specification of the Federal Test Procedure urban driving cycle (1371 segments) or the Highway Fuel Economy Test (HWFET) (758 segments). The primary purpose of this modification was to provide EPA with greater flexibility in the use of this program for the analysis of driving cycle transient effects on emissions.

A second program modification incorporated a statement to ensure that, in the simulation of individual driving segments, the value of the delta time variable (DT) would always be nonnegative and nonzero. Previously, the program would set DT to zero if the value of DT was negative. When this program feature was combined with 1-second duration driving schedule segments, program execution was terminated by the attempt to divide by a zero value of DT.

In another modification, transmission shift time was reduced from 0.5 to 0.05 second because the 0.5 value was found to be incompatible with the 1-second driving cycle segment time. Shift intervals could overrun the segment time by up to 1/2 second per shift. Thus, if a vehicle required 100 shifts over the urban cycle, the total time could be extended by as much as 50 seconds.

A problem was encountered concerning abnormal termination of the VEHSIM program. This problem was associated with an incompatibility, in a constant acceleration segment, between the velocity to be gained in the segment and the acceleration prescribed for the segment by the driving schedule. The previous segment ended (because of an upshift) with a larger velocity than the terminal velocity of the following constant acceleration segment. This resulted in a situation where VEHSIM attempted to achieve a negative velocity increment with a positive acceleration. The problem was corrected by exploiting the feature of a constant velocity segment which provides for an initial acceleration to achieve the desired constant velocity. A test was introduced to determine if the prescribed acceleration and the required velocity increment in a constant acceleration segment have the same sign. If the test fails, the segment is to be treated as if it were a constant velocity segment, conditions and flags are set appropriately, and a transfer is made to the code for a constant velocity segment.

The most important program modification was the addition of a magnetic tape output containing, for the end of each driving segment, the following:

cumulative time (seconds)
cumulative distance traveled (miles)
cumulative fuel consumed (pounds)
engine horsepower
engine rotational speed (rpm)
engine torque (foot-pounds)
manifold vacuum (inches of mercury)
percent throttle
segment identification

This tape includes a complete record of engine operating conditions over the driving cycle, and thus provides a convenient data base for calculating the cycle history of a variety of engine performance parameters (e.g., emissions, air flow, spark advance, etc.) without the necessity of rerunning VEHSIM. To implement this calculation and to add to the output of VEHSIM information on air flow and spark advance required for the analysis of carburetion and timing calibration effects, an auxiliary program, VSIMI, was written. Inputs to VSIMI consist of the output tape from VEHSIM and, as used for the current EPA study, air flow and spark advance maps. The primary output of VSIMI is a magnetic tape giving, for each segment of the driving cycle, quantities such as engine load (BMEP), incremental air flow, fuel flow, instantaneous and fuel-weighted air-to-fuel ratio and spark advance, and other useful parameters. Were emission maps to be entered (instead of air flow and timing data), the VSIMI output would include cumulative pollutants generated. It may be noted that the operating time for VSIMI is about one-fourth that of VEHSIM.

To complete the analysis of carburetion and timing effects, a second auxiliary program, VSIMII, was written. The purpose of VSIMII is to calculate, for many distributor-carburetor combinations, fuel-weighted average values of air-to-fuel ratio and of spark advance. A more detailed description of VSIMI and VSIMII will be found in Section 6.

In addition to the preceding, a minor modification to VEHSIM was made to reduce the number of lines of printed output following each page heading to match the paper size used at Aerospace.

3.5 VERIFICATION TESTS

Program VEHSIM was obtained from DOT and was adapted for running on the Aerospace CDC 7600 computer. After adaptation, the DOT-supplied test case was successfully run, and the results of the test case match the results reported in the DOT program documentation (Ref. 1).

An examination of Reference 1 concluded that VEHSIM is based upon correct engineering concepts and valid computational techniques (see Section 2).

As an additional check, a reference vehicle, used previously in the Aerospace vehicle simulation program, was used for a comparative test case and for program cross-calibration. This reference vehicle was an American Motor's Matador with a 401 CID engine. The driving cycle was the 1371-second 1975 Federal Test Procedure urban driving cycle. The results of this check are shown in Table 3-1. The DOT program produced an average fuel economy value of 10.5 mpg. The EPA certification test results for this vehicle indicate a fuel economy value of 11.0 mpg for the simulated urban driving cycle. It was thereby concluded that VEHSIM produces reasonable and apparently accurate results, as used to perform vehicle simulations over specified driving cycles and to compare different vehicles and cycles.

The program modifications described in Section 3.4 have been tested and verified as to accuracy. It must be noted, however, that the VEHSIM magnetic tape output routine has only been checked when the VEHSIM command *LIMIT PRINT is in effect with the SEGMENT parameter, that is, only when VEHSIM printout occurs at the end of each segment of the driving cycle. The VEHSIM program itself has not been subjected, at Aerospace, to the usual processes of software validation and verification. Thus, it cannot be certified to be in final and complete form or that it is the most current version of the program. For these reasons, VEHSIM is made available with the understanding that a formal warranty as to the accuracy of the program cannot be provided.

Table 3-1. VEHSIM Program Verification Fuel Economy, Urban Cycle
(Generalized Engine Map: Taylor)

			Fuel Economy		
Vehicle	CID	IW	1975/1976 Certification	VEHSIM	Aerospace
Matador	401	4500	11.0	10.5 (-4.5%)	9.9 (-10%)

Note: VEHSIM and Aerospace simulations include air conditioning.

SECTION 4

APPROACH TO THE ANALYSIS OF TIMING AND CARBURETION CALIBRATION DATA

4.1 OVERVIEW OF COMPUTATIONAL APPROACH

The analysis of carburetion and timing calibration data entails the determination and calculation of factors representing the fuel economy influence of ignition timing and carburetor calibration differences in certification test vehicles. The present effort was specifically concerned with distributor and carburetor calibration curves (approximately 350 each) representing equipment in 1976 model year cars. The general approach taken in the development of fuel economy factors for this calibration data was as follows:

a. The fuel economy influence of the calibration characteristic was defined as the summation over the driving cycle of the product of the fuel fraction consumed in a given cycle segment and the value of the calibration parameter in that segment. This process produces a fuel-weighted, cycle average value of the calibration variable; i.e., spark advance, air-fuel ratio.

b. A set of reference vehicles representative of the 1976 domestic new car fleet was selected. Computer simulation runs using these vehicles were made to develop cycle histories of engine operating conditions and vehicle fuel consumption to be used as a basis for evaluating and fuel-weighting the calibration variables.

c. Correction factors for adjusting these results to vehicles with weight, axle ratio, and/or transmission options different from those of the reference cases were developed by determining the sensitivity of the reference vehicle fuel-weighted factors to changes in these variables.

d. The data base of timing and carburetor calibration curves was sorted with respect to applicable reference vehicles. Applying the engine and vehicle parameters developed in b to these sets of calibration curves and using the appropriate correction factors developed in c, fuel-weighted spark advance and air-fuel ratio factors for the 1976 certification test fleet were determined.

To implement the approach described above, the capabilities of VEHSIM (the existing DOT vehicle simulation program) were extended in three steps as follows:

a. The VEHSIM program was modified to produce a magnetic tape output.

b. A new program, VSMI, was developed to add air flow rate to the VEHSIM output. It also computes fuel-weighted average air-to-fuel ratio and fuel-weighted average spark advance for the reference vehicle carburetion and timing characteristics.

c. A second new program, VSIMII, was developed to use the magnetic tape output from VSIMI and compute configuration-corrected fuel-weighted air-to-fuel ratio and fuel-weighted spark advance, in one computer run, for many distributor-carburetor combinations.

The three-step approach was motivated by the desire to utilize the DOT simulation program VEHSIM with a minimum of modifications and to exploit repeatedly the VEHSIM simulation outputs (engine, rpm, BMEP, fuel consumption, etc.) without the necessity of multiple VEHSIM runs. The approach has the additional advantage that the computation of emissions can very readily be incorporated into VSIMI.

A schematic of the relationships and functions of the various computational elements used in the timing and carburetion calibration analysis is shown in Figure 4-1. Section 6 provides a detailed description of the program.

4.2 REFERENCE VEHICLES

A set of ten reference vehicle configurations was selected. These reference vehicles were utilized in the VEHSIM program to provide a set of vehicle speed and load characteristics over the urban and highway driving cycles. This set would subsequently be used in the VSIMI and VSIMII programs to develop the fuel-weighted spark advance and air-fuel ratios for both the reference vehicles and the distributor/carburetor calibration data base.

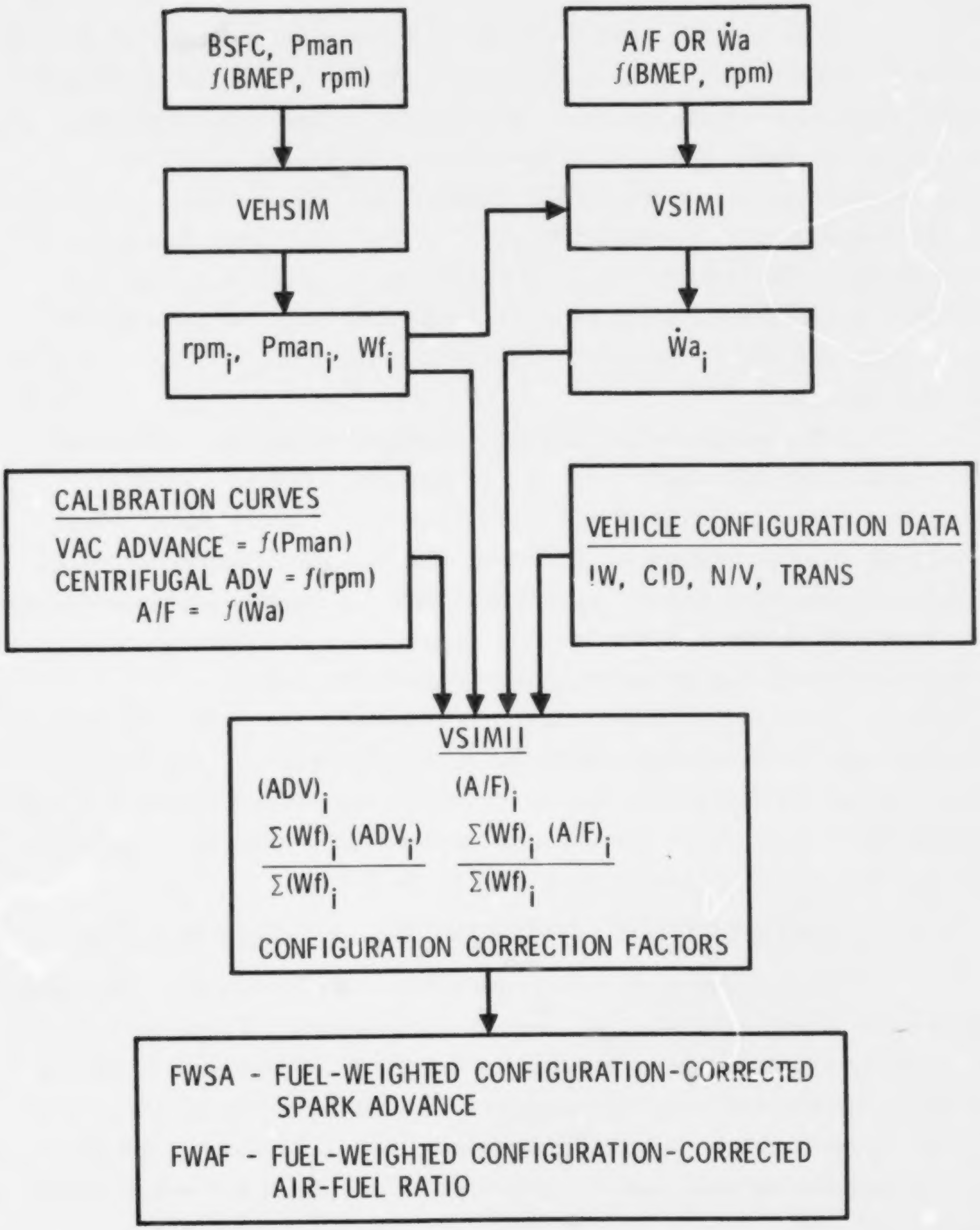
BSFC, Pman
f(BMEP, rpm)
VEHSIM
rpm_i, Pman_i, Wf_i
A/F OR $\dot{W}a$
f(BMEP, rpm)
VSIMI
$\dot{W}a_i$
CALIBRATION CURVES
VAC ADVANCE = f(Pman)
CENTRIFUGAL ADV = f(rpm)
A/F = $f(\dot{W}a)$
VEHICLE CONFIGURATION DATA
IW, CID, N/V, TRANS
VSIMII
$(\text{ADV})_i$
$(\text{A/F})_i$
$\frac{\Sigma(\text{Wf})_i\ (\text{ADV}_i)}{\Sigma(\text{Wf})_i}$
$\frac{\Sigma(\text{Wf})_i\ (\text{A/F})_i}{\Sigma(\text{Wf})_i}$
CONFIGURATION CORRECTION FACTORS
FWSA - FUEL-WEIGHTED CONFIGURATION-CORRECTED SPARK ADVANCE
FWAF - FUEL-WEIGHTED CONFIGURATION-CORRECTED AIR-FUEL RATIO

Figure 4-1. Program Functions /Relationships

The specific vehicles in the reference set were selected on the basis of available engine maps representative of a broad spectrum of engine sizes and vehicle weights. Most of the engine maps utilized in this study (140 to 350 cubic inch displacement) were developed by DOT/Transportation Systems Center (TSC), Cambridge, Massachusetts, based on engine mapping tests conducted by the Bartlesville Energy Research Center, Bartlesville, Oklahoma. Additional engine maps were derived by scaling the 140 CID engine map to 97.6 CID (1600 cc) and the 350 CID engine map to 400 CID. Characteristics of the reference vehicles are shown in Table 4-1.

The reference vehicle fuel economy simulations were run over the urban and highway driving cycles utilizing the DOT VEHSIM program. Air flow characteristics and fuel-weighted spark advance and air-fuel ratios for the reference vehicles were calculated using the VSIMI program. Engine performance parameters utilized for this purpose included BSFC, manifold vacuum, spark advance, and air-to-fuel ratio or air flow rate as a function of engine speed (rpm) and load (torque).

Accessory loads included an allowance for power steering and cooling fan, each varying as a function of engine speed. The air conditioning load was not simulated, at the request of the project monitor, so that the simulations would more closely approximate the conditions of certification and fuel economy testing conducted by the EPA.

4.3 DISTRIBUTOR/CARBURETOR CALIBRATION CURVES

Distributor and carburetor calibration curves for 1976 model vehicles were supplied by the EPA for use in this study. These included approximately 350 distributor/carburetor calibration curve sets involving about 500 domestic and import passenger cars and light duty trucks. Of this total, approximately 12 percent were not used in developing the data base. Those data not used and the reasons for deleting it are summarized in Table 4-2.

Table 4-1. Reference Vehicle Characteristics

Manufacturer	Model	CID	Carb. Venturis	Trans.	Inertia Weight, lb	Axle Ratio	N/V
*	*	400	*	A	5000	3.08	38.8
General Motors	Caprice	350	2	A	5000	3.08	38.8
Chrysler	Coronet	318	2	A	4500	3.21	40.9
Chrysler	Coronet	318	2	M-3	4500	3.21	40.9
American Motors	Matador	258	1	A	4000	3.15	39.0
American Motors	Matador	258	1	M-3	4000	3.15	39.0
Chrysler	Aspen	225	1	A	3500	3.21	44.0
Chrysler	Aspen	225	1	M-3	3500	3.21	44.0
General Motors	Monza	140	2	M-3	3000	2.92	43.0
**	**	97.6	**	M-4	2500	3.70	56.5

* Scaled from GM 350-2V engine map.

** Scaled from GM 140-2V engine map.

Table 4-2. Distributor/Carburetor Data Deleted

No. of Calibrations	No. of Vehicles	Manufacturer	Remarks
4	5	Mazda	Rotary engine, deleted at request of project monitor.
14	14	Honda	CVCC engine, deleted at request of project monitor.
21	36	numerous	Pulsed fuel injection system. Fuel flow rate or air-fuel ratio not given. Manufacturers include VW, Jaguar, Porsche, BMW, Volvo, Renault, and General Motors.
1	2	Toyota	Two vacuum advance curves (main and sub) presented. Criteria for use not indicated.
1	1	Ferrari	Two centrifugal advance curves presented. Criteria for use not indicated.

A number of distributor calibrations for import vehicles displayed combined advance and retard or retard-only features, but no operating criteria for the application of these curves were provided. In these cases, the centrifugal advance characteristic only was used in developing the fuel-weighted spark advance factor.

The distributor/carburetion calibration curve sets utilized in developing the data base were sorted into groups most closely associated with the reference vehicle engine displacements for the purpose of obtaining reference or baseline configuration values of fuel-weighted spark advance and air-fuel ratio over the urban and highway driving cycle. The selection of engine displacement as the criterion for sorting the calibration curves was based on the assumption that engines of similar displacement will have comparable air flow requirements. Section 5 identifies the individual distributors/carburetors by part number, the 1976 model year vehicle on which they were certified, and the reference vehicles with which they are associated.

4.4 FUEL-WEIGHTED SPARK ADVANCE AND AIR-FUEL RATIO

Fuel-weighted spark advance and air-fuel ratio factors for the urban and highway driving cycles were determined according to the following computational procedure:

$$\text{weighted spark advance} = \frac{\sum\left[(\mathrm{WF})_i \times (\mathrm{ADV})_i\right]}{\sum(\mathrm{WF})_i}$$

$$\text{weighted air-fuel ratio} = \frac{\sum\left[(\mathrm{WF})_i \times (\mathrm{A/F})_i\right]}{\sum(\mathrm{WF})_i}$$

where

$(WF)_i$ = fuel consumed by the reference vehicle over a 1-second interval of the driving cycle, pounds.

$(ADV)_i$ = total spark advance over the same 1-second interval of the driving cycle, degrees of advance.

$(A/F)_i$ = air-fuel ratio over the same 1-second interval of the driving cycle, nondimensional.

In the case of the reference vehicles, the air-fuel ratio and spark advance over any 1 second of the driving cycle were determined from the VSIMI input engine map data utilizing the engine operating points developed in the VEHSIM program.

For the distributor/carburetor calibration curves, the fuel-weighted spark advance and air-fuel ratio were calculated within the VSIMII program. For the distributor calibration data, the centrifugal advance and vacuum advance values were calculated as a function of engine speed and load, and were summed to obtain the total advance.

4.5 SENSITIVITY FACTORS

In order to permit the determination of fuel-weighted factors for vehicles of weight, engine size, or speed ratio (N/V) different from those of the reference vehicles, sensitivity factors were developed relating the effect of these variables on weighted spark advance and air-fuel ratio. In order to develop these sensitivity factors, weight and axle ratio changes were made to certain of the reference vehicles, and these altered configurations were run on the VEHSIM and VSIMI programs. The vehicle configurations for this evaluation are given in Table 4-3. These vehicle configurations in combination with the reference vehicles permit an evaluation of the effect of engine displacement (350 and 400 CID, 140 and 225 CID) on fuel-weighted spark advance and air-fuel ratio. Weight and speed ratio effects were determined from the 350, 225, and 140 CID vehicles.

Table 4-3. Configurations for Developing Sensitivity Factors

Displ. CID	Trans.	Inertia Weight	Axle Ratio	N/V	Change from Reference Vehicle
350	A	4500	3.08	38.8	Inertia weight reduced 500 pounds
350	A	5000	2.73	34.4	Axle ratio reduced from 3.08 to 2.73
225	A	3000	3.21	44.0	Inertia weight reduced 500 pounds
225	A	3500	2.76	37.6	Axle ratio reduced from 3.21 to 2.76
225	M-3	3000	3.21	44.0	Inertia weight reduced 500 pounds
225	M-3	3500	2.76	37.6	Axle ratio reduced from 3.21 to 2.76
140	M-3	2500	2.92	43.0	Inertia weight reduced 500 pounds
140	M-3	3000	3.21	47.6	Axle ratio increased from 2.92 to 3.21

The sensitivity factors are defined as follows:

Weight Sensitivity Factor for Spark Advance

$$(WTSF)_{ADV} = \frac{(ADV)_1 - (ADV)_0}{(ADV)_0 \times (W_1 - W_0)/W_0} \quad (1)$$

where

$(WTSF)_{ADV}$ = weight sensitivity factor for spark advance, percent change in weighted advance per percent change in inertia weight.

$(ADV)_0$ = fuel-weighted spark advance for reference vehicle (weight W_0).

$(ADV)_1$ = fuel-weighted spark advance for altered configuration (weight W_1).

W_0 = inertia weight of reference vehicle.

W_1 = inertia weight of altered configuration.

Weight Sensitivity Factor for Air-Fuel Ratio

$$(WTSF)_{A/F} = \frac{(A/F)_1 - (A/F)_0}{(A/F)_0 \times (W_1 - W_0)/W_0} \quad (2)$$

where

$(WTSF)_{A/F}$ = weight sensitivity factor for air-fuel ratio, percent change in weighted air-fuel ratio per percent weight change.

$(A/F)_0$ = fuel-weighted air-fuel ratio for reference vehicle (weight W_0).

$(A/F)_1$ = fuel-weighted air-fuel ratio for altered configuration (weight W_1).

Speed Ratio Sensitivity Factor for Spark Advance

$$(SRSF)_{ADV} = \frac{(ADV)_1 - (ADV)_0}{(ADV)_0 \times (SR_1 - SR_0)/SR_0} \tag{3}$$

where

$(SRSF)_{ADV}$ = speed ratio sensitivity factor for spark advance, percent change in weighted advance per percent change in speed ratio.

SR_0 = speed ratio of reference vehicle (N/V).

SR_1 = speed ratio of altered configuration (N/V).

Speed Ratio Sensitivity Factor for Air-Fuel Ratio

$$(SRSF)_{A/F} = \frac{(A/F)_1 - (A/F)_0}{(A/F)_0 \times (SR_1 - SR_0)/SR_0} \tag{4}$$

where

$(SRSF)_{A/F}$ = speed ratio sensitivity factor for air-fuel ratio, percent change in weighted air-fuel ratio per percent change in speed ratio.

Engine Displacement Sensitivity Factor for Spark Advance

$$(DSF)_{ADV} = \frac{(ADV)_1 - (ADV)_0}{(ADV)_0 \times (D_1 - D_0)/D_0} \tag{5}$$

where

$(DSF)_{ADV}$ = engine displacement sensitivity factor for spark advance, percent change in weighted advance per percent change in engine displacement.

D_0 = engine displacement of reference vehicle, cubic inches.

D_1 = engine displacement of altered configuration, cubic inches.

Engine Displacement Sensitivity Factor for Air-Fuel Ratio

$$(DSF)_{A/F} = \frac{(A/F)_1 - (A/F)_0}{(A/F)_0 \times (D_1 - D_0)/D_0} \tag{6}$$

where

$(DSF)_{A/F}$ = engine displacement sensitivity factor for air-fuel ratio, percent change in weighted air-fuel ratio per percent change in engine displacement.

Transmission Type Sensitivity Factor for Spark Advance

$$(TSF)_{ADV} = \frac{(ADV)_1 - (ADV)_0}{(ADV)_0} \tag{7}$$

where

$(TSF)_{ADV}$ = transmission type sensitivity factor for spark advance, fractional change in weighted advance due to change in transmission type. Subscript 0 = automatic, subscript 1 = manual.

Transmission Type Sensitivity Factor for Air-Fuel Ratio

$$(TSF)_{A/F} = \frac{(A/F)_1 - (A/F)_0}{(A/F)_0} \tag{8}$$

where

$(TSF)_{A/F}$ = transmission type sensitivity factor for air-fuel ratio, fractional change in weighted air-fuel ratio due to change in transmission type. Subscript 0 = automatic, subscript 1 = manual.

The use of these factors to adjust the calculated fuel-weighted calibration parameters to vehicle configurations different from the simulated reference vehicles may be illustrated by the following example for fuel-weighted spark advance as corrected for the effects of vehicle weight difference.

$$(\mathrm{ADV})_{4750} = (\mathrm{ADV})_{5000}\left[(\mathrm{WTSF})_{\mathrm{ADV}}\frac{(4750 - 5000)}{5000} + 1\right]$$

where

$(\mathrm{ADV})_{4750}$ = fuel-weighted spark advance for vehicle of 4750-pound inertia weight.

$(\mathrm{ADV})_{5000}$ = fuel-weighted spark advance calculated for vehicle of 5000-pound inertia weight.

$(\mathrm{WTSF})_{\mathrm{ADV}}$ = weight sensitivity factor for spark advance.

Corrections to the fuel-weighted factors for transmission type take the following form:

$$(\mathrm{ADV})_{\mathrm{man}} = (\mathrm{ADV})_{\mathrm{auto}}\left[(\mathrm{TSF})_{\mathrm{ADV}} + 1\right]$$

where

$(\mathrm{ADV})_{\mathrm{man}}$ = fuel-weighted spark advance for vehicle equipped with manual transmission.

$(\mathrm{ADV})_{\mathrm{auto}}$ = fuel-weighted spark advance for vehicle equipped with automatic transmission.

$(\mathrm{TSF})_{\mathrm{ADV}}$ = transmission-type sensitivity factor for spark advance.

SECTION 5

RESULTS

5.1 REFERENCE VEHICLE DATA

Results of the VEHSIM vehicle simulations over the urban and highway driving cycles for the reference vehicles are summarized in Table 5-1. For purposes of comparison, the certification fuel economy values are also shown. It will be noted that the simulation results are in reasonable agreement with the certification values, with the single exception of the Chrysler 318 CID vehicle with automatic transmission. However, the simulation results for this vehicle do not appear to be out of line with simulation values for similar vehicles in the list. Computer summaries for each reference vehicle simulation are presented in Tables 5-2 through 5-11 showing: schedule averages (fuel economy, work per mile, average specific fuel consumption, and average speed); the total time; distance; energy; and fuel consumption; and a breakdown of the energy consumption in horsepower-hours of various elements of the vehicle over the indicated driving cycle. A complete VEHSIM run for the 350 CID 5000-pound reference vehicle case is given in the Appendix.

VSIMI results for weighted spark advance and air-fuel ratio for the reference vehicles and for the additional configurations used in developing sensitivity factors are shown in Table 5-12.

5.2 SENSITIVITY VALUES

The sensitivity factors discussed in Section 4.5 were calculated based on the results of the reference vehicle runs given in Table 5-12. The results are shown in Tables 5-13 through 5-16. In general, the sensitivity factors for air-fuel ratio are significantly smaller than for spark advance, suggesting a general insensitivity to vehicle configuration effects. In any given configuration category, it will be seen that the magnitudes of the calculated sensitivity factors vary considerably from vehicle to vehicle, but with no readily identifiable trends. Part of this variability is believed to be due to subtracting calibration variables of like magnitude in the process of developing the sensitivity factors.

Calculated mean values for the sensitivity factors are shown in the tables. These factors were used in VSIMII to correct the fuel-weighted calibration parameters to specific vehicle configurations in the 1976 certification test fleet. Characteristics of the 1976 test fleet were obtained from a data tape supplied by EPA.

5.3 FUEL-WEIGHTED CALIBRATION FACTORS FOR 1976 CERTIFICATION TEST FLEET

Values for fuel-weighted spark advance and air-fuel ratio computed by the VSIMII program for the 1976 certification test fleet are given in Tables 5-17 through 5-26. The data are grouped by the reference vehicle (displacement, transmission type, and inertia weight) on which the data were run. Each distributor and carburetor is identified by part number and the 1976 model year vehicle on which they were certified. Each vehicle is identified by the manufacturer's identification code and the entry number shown in the EPA data tape listing. Results show both the reference value and the configuration-corrected value for the fuel-weighted spark advance, in degrees, and the fuel-weighted air-fuel ratio over both the urban and highway driving cycles.

Table 5-1. Reference Vehicle Fuel Economy – Simulation versus Certification Values

Manufacturer	CID	IW	Tran.	Axle Ratio	VEHSIM		Certification[a]		% Δ MPG		Comments
					Urban	Hwy.	Urban	Hwy.	Urban	Hwy.	
-	400	5000	A	3.08	11.72	14.98	-	-	-	-	Engine map scaled from 350 CID
GMC	350	5000	A	3.08	12.53	16.37	13	18	- 3.6	- 9.1	
Chrysler	318	4500	A	3.21	13.70	17.75	10	15	+ 37.0	+ 18.3	
Chrysler	318	4500	M-3	3.21	14.49	18.55	13	19	+ 11.5	- 2.4	
AMC	258	4000	A	3.15	15.00	19.09	-	-	-	-	
AMC	258	4000	M-3	3.15	15.37	19.92	17[b]	20[b]	- 9.6	- 0.4	
Chrysler	225	3500	A	3.21	16.88	22.15	-	-	-	-	
Chrysler	225	3500	M-3	3.21	17.32	23.02	18[b]	25[b]	- 3.8	- 7.9	
GMC	140	3000	M-3	2.92	22.40	26.77	22[b]	31[b]	+ 1.8	- 13.6	
-	97.6	2500	M-4	3.70	21.15	27.71	-	-	-	-	Engine map scaled from 140 CID

[a] 1975 Federal

[b] 1976 Federal

Table 5-2. Vehicle Performance Simulation
Reference Case 5000/A/3.08, 400 CID

```
VEHICLE PERFORMANCE SIMULATION   09/28/76
******************************************

RUN TITLE = CASE A5C00/A/ 3.08, 400 CID, URBAN

SCHEDULE AVERAGES      FUEL ECONOMY      = 11.72 MPG
                       WORK PER MILE     =   .62 HP-HR/MI
                       AVG SP FUEL CONS  =   .85 LBS/HP-HR
                       AVG SPEED         = 19.5  MPH

TOTALS                           TCTAL          PERCENT  OF TOTAL
          VARIABLE  (UNITS)    AMOUNT  (CRUISE  ACCEL   DECEL   IDLE )  (BRAKES)
          --------  -------    ------  ------  ------  ------  ------   ------
          TIME      (SECS)     1370.9     8.0    39.7    34.5    17.7
          DISTANCE  (MILES)       7.4    12.0    46.9    41.1     0.0
          ENERGY    (HP-HR)      4.63     8.0    83.8     7.2     1.0
          FUEL      (LBS)        3.92     8.9    62.6    19.1     9.4      5.6

ENERGY SUPPLY                                  HP-HR
                                               -----
                  (1) ENGINE                =  4.63
                  (2) KINETIC ENERGY        =  0.00
                  (3) POTENTIAL ENERGY      =  0.00
                  (4) ROTATING INERTIA      =  0.00

BREAKDOWN                          PERCENT ENGINE HP-HR
                                   --------------------
                  (1) ACCESSORIES           =    8.59
                  (2) TORQUE CONVERTER      =   13.49
                  (3) GEAR BOX              =     .60
                  (4) DIFFERENTIAL          =    3.40
                  (5) TIRE SLIP             =    5.73
                                 3+4+5      =    9.72
                               2+3+4+5      =   23.22
                  (6) AERODYNAMIC DRAG      =   13.80
                  (7) ROLLING RESIST        =   31.60
                          SUBTOTAL 1- 7     =   77.20
                  (8) BRAKES                =   19.38
                  (9) ENGINE MOTORING       =    4.45
                          SUBTOTAL 1- 9     =  101.04
                 (10) OTHER ENERGY          =    0.00
                             TOTAL 1-10     =  101.04

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDC001      ROUTE NAME               = LEVEL            AERO DRAG = 24.2, .48
  VEHICLE NAME          = V5000A      ENGINE NAME              = GM350M
  CONVERTER NAME        = CODY2       SHIFT LOGIC NAME         = TEST2
  WEIGHT (LBS)          =  5000.      STROKE (INCHES)          =   3.75
  DISPLACEMENT (CU IN)  =  400.0      REAR AXLE RATIO          =   3.08
  WIND VELOCITY (MPH)   =    0.0      FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-2. Vehicle Performance Simulation
Reference Case 5000/A/3.08, 400 CID (Continued)

```
          VEHICLE PERFORMANCE SIMULATION   09/28/76
          ****************************************

RUN TITLE = CASE A5000/A/3.08  400 CID, HIGHWAY

SCHEDULE AVERAGES       FUEL ECONOMY      = 14.98 MPG
                        WORK PER MILE     =   .59 HP-HR/MI
                        AVG SP FUEL CONS  =   .70 LBS/HP-HR
                        AVG SPEED         = 48.3  MPH

TOTALS                           TOTAL            PERCENT  OF TOTAL
          VARIABLE  (UNITS)   AMOUNT  (CRUISE  ACCEL   DECEL    IDLE )  (BRAKES)
          --------  -------   ------   ------  ------  ------  ------    ------
          TIME      (SECS)    760.4     16.3    44.1    38.8      .8
          DISTANCE  (MILES)    10.2     17.9    43.3    38.8     0.0
          ENERGY    (HP-HR)     5.97    17.3    61.0    21.7      .0
          FUEL      (LBS)       4.20    17.9    51.3    30.6      .2        .9

ENERGY SUPPLY                                   HP-HR
                                                -----
                  (1) ENGINE             =      5.97
                  (2) KINETIC ENERGY     =      0.00
                  (3) POTENTIAL ENERGY   =      0.00
                  (4) ROTATING INERTIA   =      0.00

BREAKDOWN                          PERCENT ENGINE HP-HR
                                   --------------------
                  (1) ACCESSORIES         =     7.46
                  (2) TORQUE CONVERTER    =     5.95
                  (3) GEAR BOX            =      .02
                  (4) DIFFERENTIAL        =     3.57
                  (5) TIRE SLIP           =     6.01
                                3+4+5     =     9.60
                              2+3+4+5     =    15.55
                  (6) AERODYNAMIC DRAG    =    34.63
                  (7) ROLLING RESIST      =    37.60
                         SUBTOTAL 1- 7    =    95.23
                  (8) BRAKES              =     3.27
                  (9) ENGINE MOTORING     =     1.60
                         SUBTOTAL 1- 9    =   100.10
                 (10) OTHER ENERGY        =     0.00
                            TOTAL 1-10    =   100.10

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDC002         ROUTE NAME                = LEVEL
  VEHICLE NAME          = V5000A         ENGINE NAME               = GM350M
  CONVERTER NAME        = CODY2          SHIFT LOGIC NAME          = TEST2
  WEIGHT (LBS)          =  5000.         STROKE (INCHES)           =   3.75
  DISPLACEMENT (CU IN)  =  400.0         REAR AXLE RATIO           =   3.08
  WIND VELOCITY (MPH)   =    0.0         FUEL DENSITY (LB/GAL)     =   6.18
```

Table 5-3. Vehicle Performance Simulation
Reference Case 5000/A/3.08, 350 CID

```
      VEHICLE PERFORMANCE SIMULATION    09/28/76
      ******************************************

RUN TITLE = CASE 1U     GMC 350, AUTO, 5000-LB CLASS, FTP URBAN, 3.08 IN

SCHEDULE AVERAGES       FUEL ECONOMY       = 12.53 MPG
                        WORK PER MILE      =   .62 HP-HR/MI
                        AVG SP FUEL CONS   =   .80 LBS/HP-HR
                        AVG SPEED          = 19.5  MPH

TOTALS                         TOTAL            PERCENT OF TOTAL
      VARIABLE (UNITS) AMOUNT (CRUISE ACCEL  DECEL   IDLE ) (BRAKES)
      -------- ------- ------  ------ ------ ------ ------   ------
      TIME     (SECS) 1371.4     8.0   39.8   34.5   17.7
      DISTANCE (MILES)   7.4    12.1   46.9   41.0    0.0
      ENERGY   (HP-HR)   4.61    8.0   83.7    7.3    1.0
      FUEL     (LBS)     3.67    8.8   64.3   18.3    8.7      5.0

ENERGY SUPPLY                                HP-HR
                                             -----
                     (1) ENGINE           =  4.61
                     (2) KINETIC ENERGY   =  0.00
                     (3) POTENTIAL ENERGY =  0.00
                     (4) ROTATING INERTIA =  0.00

BREAKDOWN                          PERCENT ENGINE HP-HR
                                   --------------------
                     (1) ACCESSORIES      =    8.65
                     (2) TORQUE CONVERTER =   12.50
                     (3) GEAR BOX         =     .63
                     (4) DIFFERENTIAL     =    3.36
                     (5) TIRE SLIP        =    5.66
                                  3+4+5   =    9.64
                                2+3+4+5   =   22.15
                     (6) AERODYNAMIC DRAG =   13.87
                     (7) ROLLING RESIST   =   31.76
                           SUBTOTAL 1- 7  =   76.43
                     (8) BRAKES           =   20.87
                     (9) ENGINE MOTORING  =    2.72
                           SUBTOTAL 1- 9  =  100.03
                    (10) OTHER ENERGY     =    0.00
                              TOTAL 1-10  =  100.03

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME  - UDC001       ROUTE NAME               = LEVEL
  VEHICLE NAME           = V5[illegible]8        ENGINE NAME              = GM350M
  CONVERTER NAME         = CODY2        SHIFT LOGIC NAME         = TEST2
  WEIGHT (LBS)           = 5000.        STROKE (INCHES)          =   3.48
  DISPLACEMENT (CU IN)   = 349.8        REAR AXLE RATIO          =   3.08
  WIND VELOCITY (MPH)    =    0.0       FUEL DENSITY (LB/GAL)    =   6.18
```

AERO DRAG = 24.2, .48

Table 5-3. Vehicle Performance Simulation
Reference Case 5000/A/3.08, 350 CID (Continued)

```
          VEHICLE PERFORMANCE SIMULATION   09/28/76
          ******************************************

RUN TITLE = CASE 1U      GMC 350, AUTO, 5000-LB CLASS, FTP HIWAY, 3.08 IN

SCHEDULE AVERAGES        FUEL ECONOMY       = 16.37 MPG
                         WORK PER MILE      =   .59 HP-HR/MI
                         AVG SP FUEL CONS   =   .64 LBS/HP-HR
                         AVG SPEED          = 48.2  MPH

TOTALS                       TOTAL              PERCENT OF TOTAL
          VARIABLE (UNITS)   AMOUNT  (CRUISE  ACCEL   DECEL    IDLE )  (BRAKES)
          -------- -------  ------   ------  ------  ------   ------    ------
          TIME     (SECS)   760.6     16.3    44.1    38.8      .8
          DISTANCE (MILES)   10.2     17.9    43.3    38.8     0.0
          ENERGY   (HP-HR)    5.97    17.4    61.0    21.7      .0
          FUEL     (LBS)      3.85    17.5    52.9    29.4      .2         .9

ENERGY SUPPLY                                   HP-HR
                                                -----
                   (1) ENGINE            =      5.97
                   (2) KINETIC ENERGY    =      0.00
                   (3) POTENTIAL ENERGY  =      0.00
                   (4) ROTATING INERTIA  =      0.00

BREAKDOWN                            PERCENT ENGINE HP-HR
                                     --------------------
                   (1) ACCESSORIES          =    7.46
                   (2) TORQUE CONVERTER     =    5.84
                   (3) GEAR BOX             =     .04
                   (4) DIFFERENTIAL         =    3.56
                   (5) TIRE SLIP            =    5.98
                                  3+4+5     =    9.58
                                2+3+4+5     =   15.42
                   (6) AERODYNAMIC DRAG     =   34.64
                   (7) ROLLING RESIST       =   37.61
                         SUBTOTAL 1- 7      =   95.12
                   (8) BRAKES               =    3.60
                   (9) ENGINE MOTORING      =    1.30
                         SUBTOTAL 1- 9      =  100.02
                  (10) OTHER ENERGY         =    0.00
                            TOTAL 1-10      =  100.02

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDC002         ROUTE NAME               = LEVEL
  VEHICLE NAME          = V50008         ENGINE NAME              = GM350M
  CONVERTER NAME        = CODY2          SHIFT LOGIC NAME         = TEST2
  WEIGHT (LBS)          =  5000.         STROKE (INCHES)          =   3.48
  DISPLACEMENT (CU IN)  =  349.8         REAR AXLE RATIO          =   3.08
  WIND VELOCITY (MPH)   =    0.0         FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-4. Vehicle Performance Simulation
Reference Case 4500/A/3.21/318 CID

```
          VEHICLE PERFORMANCE SIMULATION   09/30/76
          ****************************************

RUN TITLE = CASE 3(A), CHY 318, AUTO, 4500LB, 3.21RAR, FTP URBAN

SCHEDULE AVERAGES        FUEL ECONOMY      = 13.70 MPG
                         WORK PER MILE     =   .56 HP-HR/MI
                         AVG SP FUEL CONS  =   .81 LBS/HP-HR
                         AVG SPEED         = 19.6  MPH

TOTALS                       TOTAL          PERCENT OF TOTAL
          VARIABLE (UNITS) AMOUNT (CRUISE ACCEL  DECEL   IDLE  ) (BRAKES)
          -------- ------- ------  ------ ------ ------ ------    ------
          TIME     (SECS) 1370.4     8.0   39.7   34.6   17.7
          DISTANCE (MILES)    7.4   12.0   46.8   41.2     0.0
          ENERGY   (HP-HR)   4.14    8.2   82.9    9.0     .9
          FUEL     (LBS)     3.36    8.3   59.2   23.3    9.2       8.9

ENERGY SUPPLY                                   HP-HR
                                                -----
                         (1) ENGINE           =  4.14
                         (2) KINETIC ENERGY   =  0.00
                         (3) POTENTIAL ENERGY =  0.00
                         (4) ROTATING INERTIA =  0.00

BREAKDOWN                              PERCENT ENGINE HP-HR
                                       --------------------
                         (1) ACCESSORIES      =    9.62
                         (2) TORQUE CONVERTER =   14.28
                         (3) GEAR BOX         =     .70
                         (4) DIFFERENTIAL     =    3.56
                         (5) TIRE SLIP        =    6.01
                                      3+4+5   =   10.27
                                    2+3+4+5   =   24.55
                         (6) AERODYNAMIC DRAG =   14.49
                         (7) ROLLING RESIST   =   31.83
                                SUBTOTAL 1- 7 =   80.49
                         (8) BRAKES           =   17.93
                         (9) ENGINE MOTORING  =    5.93
                                SUBTOTAL 1- 9 =  104.36
                        (10) OTHER ENERGY     =    0.00
                                   TOTAL 1-10 =  104.36

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDC001        ROUTE NAME               = LEVEL          AERO DRAG = 22.70, .48
  VEHICLE NAME          = V4500C        ENGINE NAME              = CY318M
  CONVERTER NAME        = CODY2         SHIFT LOGIC NAME         = TEST2
  WEIGHT (LBS)          =  4500.        STROKE (INCHES)          =   3.31
  DISPLACEMENT (CU IN)  =  318.0        REAR AXLE RATIO          =   3.21
  WIND VELOCITY (MPH)   =    0.0        FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-4. Vehicle Performance Simulation
Reference Case 4500/A/3.21/318 CID (Continued)

```
          VEHICLE PERFORMANCE SIMULATION   09/30/75
          ******************************************

RUN TITLE = CASE 3(A), CHY 318, AUTO, 4500LB, 3.21 RAR, FTP HIGHWAY

SCHEDULE AVERAGES     FUEL ECONOMY      = 17.75 MPG
                      WORK PER MILE     =   .54 HP-HR/MI
                      AVG SP FUEL CONS  =   .65 LBS/HP-HR
                      AVG SPEED         = 48.3  MPH

TOTALS                         TOTAL         PERCENT OF TOTAL
          VARIABLE (UNITS)  AMOUNT (CRUISE ACCEL  DECEL   IDLE ) (BRAKES)
          -------- -------  ------  ------ ------ ------ ------   ------
          TIME     (SECS)   760.4    16.3   44.1   38.8     .8
          DISTANCE (MILES)   10.2    17.9   43.3   38.9    0.0
          ENERGY   (HP-HR)    5.49   17.5   60.1   22.4     .0
          FUEL     (LBS)      3.55   17.4   52.6   29.8     .2       1.4

ENERGY SUPPLY                               HP-HR
                                            -----
                    (1) ENGINE            =  5.49
                    (2) KINETIC ENERGY    =  0.00
                    (3) POTENTIAL ENERGY  =  0.00
                    (4) ROTATING INERTIA  =  0.00

BREAKDOWN                      PERCENT ENGINE HP-HR
                               --------------------
                    (1) ACCESSORIES       =    9.21
                    (2) TORQUE CONVERTER  =    4.33
                    (3) GEAR BOX          =     .04
                    (4) DIFFERENTIAL      =    3.55
                    (5) TIRE SLIP         =    5.98
                                 3+4+5    =    9.58
                               2+3+4+5    =   13.91
                    (6) AERODYNAMIC DRAG  =   35.36
                    (7) ROLLING RESIST    =   36.83
                          SUBTOTAL 1- 7   =   95.30
                    (8) BRAKES            =    3.37
                    (9) ENGINE MOTORING   =    1.38
                          SUBTOTAL 1- 9   =  100.05
                   (10) OTHER ENERGY      =    0.00
                             TOTAL 1-10   =  100.05

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDC002      ROUTE NAME               = LEVEL
  VEHICLE NAME          = V4500C      ENGINE NAME              = CY318M
  CONVERTER NAME        = CODY2       SHIFT LOGIC NAME         = TEST2
  WEIGHT (LBS)          =  4500.      STROKE (INCHES)          =   3.31
  DISPLACEMENT (CU IN)  =  318.0      REAR AXLE RATIO          =   3.21
  WIND VELOCITY (MPH)   =    0.0      FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-5. Vehicle Performance Simulation
Reference Case 4500/M-3/3.21/318 CID

```
          VEHICLE PERFORMANCE SIMULATION   10/01/75
          ********************************************

RUN TITLE = CASE 3(M), CHY 318, M-3, 4500LB, 3.21RAR, FTP URBAN

SCHEDULE AVERAGES      FUEL ECONOMY       = 14.49 MPG
                       WORK PER MILE      =   .52 HP-HR/MI
                       AVG SP FUEL CONS   =   .81 LBS/HP-HR
                       AVG SPEED          = 19.6  MPH

TOTALS                           TOTAL               PERCENT OF TOTAL
          VARIABLE (UNITS) AMOUNT (CRUISE ACCEL  DECEL   IDLE )  (BRAKES)
          -------- ------- ------  ------ ------ ------ ------    ------
          TIME     (SECS) 1363.4     8.0   39.6   34.6   17.9
          DISTANCE (MILES)    7.4   12.0   46.8   41.3    0.0
          ENERGY   (HP-HR)   3.88    8.3   80.6    9.3    2.8
          FUEL     (LBS)     3.16    8.4   57.2   24.7    9.7       7.3

ENERGY SUPPLY                                 HP-HR
                                              -----
                       (1) ENGINE           =  3.88
                       (2) KINETIC ENERGY   =  0.00
                       (3) POTENTIAL ENERGY =  0.00
                       (4) ROTATING INERTIA =  0.00

BREAKDOWN                         PERCENT ENGINE HP-HR
                                  --------------------
                       (1) ACCESSORIES       =  10.10
                       (2) TORQUE CONVERTER  =   3.97
                       (3) GEAR BOX          =    .68
                       (4) DIFFERENTIAL      =   3.81
                       (5) TIRE SLIP         =   6.44
                                     3+4+5   =  10.93
                                   2+3+4+5   =  14.90
                       (6) AERODYNAMIC DRAG  =  15.42
                       (7) ROLLING RESIST    =  33.77
                              SUBTOTAL 1- 7  =  74.18
                       (8) BRAKES            =  18.27
                       (9) ENGINE MOTORING   =   6.45
                              SUBTOTAL 1- 9  =  98.91
                      (10) OTHER ENERGY      =   0.00
                                 TOTAL 1-10  =  98.91

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDC001       ROUTE NAME               = LEVEL        AERO DRAG = 22.70, .48
  VEHICLE NAME          = V4500C       ENGINE NAME              = CY318M
  CONVERTER NAME        = CODY2        SHIFT LOGIC NAME         = M3-2
  WEIGHT (LBS)          =  4500.       STROKE (INCHES)          =   3.31
  DISPLACEMENT (CU IN)  =  318.0       REAR AXLE RATIO          =   3.21
  WIND VELOCITY (MPH)   =    0.0       FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-5. Vehicle Performance Simulation
Reference Case 4500/M-3/3.21/318 CID (Continued)

```
          VEHICLE PERFORMANCE SIMULATION   10/01/75
          ******************************************

RUN TITLE = CASE 3(M), CHY 318, M-3, 4500LB, 3.21RAR, FTP HIGHWAY

SCHEDULE AVERAGES       FUEL ECONOMY      = 18.55 MPG
                        WORK PER MILE     =   .51 HP-HR/MI
                        AVG SP FUEL CONS  =   .65 LBS/HP-HR
                        AVG SPEED         = 48.3  MPH

TOTALS                         TOTAL            PERCENT OF TOTAL
          VARIABLE (UNITS)   AMOUNT (CRUISE  ACCEL   DECEL    IDLE  )  (BRAKES)
          -------- -------   ------  ------  ------  ------  ------    ------
          TIME     (SECS)    760.4    16.3    44.1    38.8      .8
          DISTANCE (MILES)    10.2    17.9    43.3    38.9     0.0
          ENERGY   (HP-HR)    5.24    17.7    59.5    22.8      .1
          FUEL     (LBS)      3.39    17.6    51.8    30.4      .2        1.3

ENERGY SUPPLY                                HP-HR
                                             -----
                  (1) ENGINE             =   5.24
                  (2) KINETIC ENERGY     =   0.00
                  (3) POTENTIAL ENERGY   =   0.00
                  (4) ROTATING INERTIA   =   0.00

BREAKDOWN                          PERCENT ENGINE HP-HR
                                   --------------------
                  (1) ACCESSORIES        =    9.21
                  (2) TORQUE CONVERTER   =     .11
                  (3) GEAR BOX           =     .03
                  (4) DIFFERENTIAL       =    3.73
                  (5) TIRE SLIP          =    6.27
                                3+4+5    =   10.03
                              2+3+4+5    =   10.14
                  (6) AERODYNAMIC DRAG   =   37.07
                  (7) ROLLING RESIST     =   38.61
                         SUBTOTAL 1- 7   =   95.03
                  (8) BRAKES             =    3.37
                  (9) ENGINE MOTORING    =    1.54
                         SUBTOTAL 1- 9   =   99.94
                 (10) OTHER ENERGY       =    0.00
                            TOTAL 1-10   =   99.94

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDC002        ROUTE NAME              = LEVEL
  VEHICLE NAME          = V45000        ENGINE NAME             = CY318M
  CONVERTER NAME        = CODY2         SHIFT LOGIC NAME        = M3-2
  WEIGHT (LBS)          =  4500.        STROKE (INCHES)         =   3.31
  DISPLACEMENT (CU IN)  =  318.0        REAR AXLE RATIO         =   3.21
  WIND VELOCITY (MPH)   =    0.0        FUEL DENSITY (LB/GAL)   =   6.18
```

Table 5-6. Vehicle Performance Simulation
Reference Case 4000/A/3.15/258 CID

```
          VEHICLE PERFORMANCE SIMULATION   10/06/76
          ********************************************

RUN TITLE = CASE D(A), AM258, AUTO, 4000LB, 3.15 RAR, FTP URBAN

SCHEDULE AVERAGES          FUEL ECONOMY       = 15.00 MPG
                           WORK PER MILE      =   .51 HP-HR/MI
                           AVG SP FUEL CONS   =   .80 LBS/HP-HR
                           AVG SPEED          = 19.5  MPH

TOTALS                         TOTAL             PERCENT OF TOTAL
          VARIABLE (UNITS)    AMOUNT  (CRUISE  ACCEL   DECEL    IDLE  ) (BRAKES)
          -------- -------    ------  ------   ------  ------   ------   ------
          TIME     (SECS)     1358.3     8.2    39.1    34.8    17.9
          DISTANCE (MILES)       7.3    12.3    46.1    41.6     0.0
          ENERGY   (HP-HR)      3.76     9.1    81.3     8.2     1.3
          FUEL     (LBS)        3.02     8.6    60.1    21.2    10.1       7.2

ENERGY SUPPLY                                    HP-HR
                                                 -----
                   (1) ENGINE                =   3.76
                   (2) KINETIC ENERGY        =   0.00
                   (3) POTENTIAL ENERGY      =   0.00
                   (4) ROTATING INERTIA      =   0.00

BREAKDOWN                      PERCENT ENGINE HP-HR
                               --------------------
                   (1) ACCESSORIES           =  11.91
                   (2) TORQUE CONVERTER      =   9.28
                   (3) GEAR BOX              =   1.00
                   (4) DIFFERENTIAL          =   3.52
                   (5) TIRE SLIP             =   5.95
                                   3+4+5     =  10.48
                                 2+3+4+5     =  19.76
                   (6) AERODYNAMIC DRAG      =  15.50
                   (7) ROLLING RESIST        =  30.72
                            SUBTOTAL 1- 7    =  77.89
                   (8) BRAKES                =  17.70
                   (9) ENGINE MOTORING       =   6.02
                            SUBTOTAL 1- 9    = 101.61
                  (10) OTHER ENERGY          =   0.00
                               TOTAL 1-10    = 101.61

ADDITIONAL RUN DATA

   DRIVING SCHEDULE NAME = UDCC01        ROUTE NAME              = LEVEL
   VEHICLE NAME          = V4000D        ENGINE NAME             = AM258M
   CONVERTER NAME        = CODY2         SHIFT LOGIC NAME        = TEST2
   WEIGHT (LBS)          =   4000.       STROKE (INCHES)         =   3.90
   DISPLACEMENT (CU IN)  =  258.0        REAR AXLE RATIO         =   3.15
   WIND VELOCITY (MPH)   =    0.0        FUEL DENSITY (LB/GAL)   =   6.18
```

AERO DRAG = 22.30, .48

Table 5-6. Vehicle Performance Simulation
Reference Case 4000/A/3.15/258 CID (Continued)

```
          VEHICLE PERFORMANCE SIMULATION   10/06/76
          ******************************************

RUN TITLE = CASE D(A)  AM258, AUTO, 4000LB, 3.15 RAR, FTP HIGHWAY

SCHEDULE AVERAGES       FUEL ECONOMY      = 19.09 MPG
                        WORK PER MILE     =   .50 HP-HR/MI
                        AVG SP FUEL CONS  =   .64 LBS/HP-HR
                        AVG SPEED         = 48.3  MPH

TOTALS                        TOTAL           PERCENT OF TOTAL
          VARIABLE (UNITS)  AMOUNT  (CRUISE ACCEL  DECEL   IDLE  ) (BRAKES)
          -------- -------  ------   ------ ------ ------  ------   ------
          TIME     (SECS)   759.6     16.5   43.9   38.8     .3
          DISTANCE (MILES)   10.2     18.0   43.1   38.9    0.0
          ENERGY   (HP-HR)    5.13    17.9   59.0   23.3     .0
          FUEL     (LBS)      3.29    17.7   52.8   29.2     .2        1.1

ENERGY SUPPLY                                HP-HR
                                             -----
                    (1) ENGINE            =  5.13
                    (2) KINETIC ENERGY    =  0.00
                    (3) POTENTIAL ENERGY  =  0.00
                    (4) ROTATING INERTIA  =  0.00

BREAKDOWN                           PERCENT ENGINE HP-HR
                                    --------------------
                    (1) ACCESSORIES        =    9.93
                    (2) TORQUE CONVERTER   =    3.90
                    (3) GEAR BOX           =     .09
                    (4) DIFFERENTIAL       =    3.53
                    (5) TIRE SLIP          =    5.94
                                 3+4+5     =    9.57
                               2+3+4+5     =   13.47
                    (6) AERODYNAMIC DRAG   =   37.17
                    (7) ROLLING RESIST     =   35.03
                           SUBTOTAL 1- 7   =   95.60
                    (8) BRAKES             =    3.24
                    (9) ENGINE MOTORING    =    1.19
                           SUBTOTAL 1- 9   =  100.03
                   (10) OTHER ENERGY       =    0.00
                              TOTAL 1-10   =  100.03

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDC002       ROUTE NAME               = LEVEL
  VEHICLE NAME          = V4000D       ENGINE NAME              = AM258M
  CONVERTER NAME        = CODY2        SHIFT LOGIC NAME         = TEST2
  WEIGHT (LBS)          =  4000.       STROKE (INCHES)          =   3.90
  DISPLACEMENT (CU IN)  =  256.0       REAR AXLE RATIO          =   3.15
  WIND VELOCITY (MPH)   =    0.0       FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-7. Vehicle Performance Simulation
Reference Case 4000/M-3/3.15/258 CID

```
        VEHICLE PERFORMANCE SIMULATION   10/05/76
        ******************************************

RUN TITLE = CASE D(M-3), AMD 258, M-3, 4000LB, 3.15RAR, FTP URBAN

SCHEDULE AVERAGES       FUEL ECONOMY      = 15.37 MPG
                        WORK PER MILE     =   .49 HP-HR/MI
                        AVG SP FUEL CONS  =   .81 LBS/HP-HR
                        AVG SPEED         = 19.6  MPH

TOTALS                          TOTAL          PERCENT OF TOTAL
        VARIABLE  (UNITS)  AMOUNT  (CRUISE  ACCEL   DECEL    IDLE  )  (BRAKES)
        --------  -------  ------   ------  ------  ------  ------    ------
        TIME      (SECS)  1364.7      8.0    39.5    34.6    17.8
        DISTANCE  (MILES)    7.4     12.0    46.6    41.4     0.0
        ENERGY    (HP-HR)    3.67     8.2    79.3     9.0     3.4
        FUEL      (LBS)      2.98     7.9    58.1    22.9    11.1       3.4

ENERGY SUPPLY                                HP-HR
                                             -----
                (1) ENGINE               =   3.67
                (2) KINETIC ENERGY       =   0.00
                (3) POTENTIAL ENERGY     =   0.00
                (4) ROTATING INERTIA     =   0.00

BREAKDOWN                         PERCENT ENGINE HP-HR
                                  --------------------
                (1) ACCESSORIES          =   11.76
                (2) TORQUE CONVERTER     =    4.89
                (3) GEAR BOX             =     .76
                (4) DIFFERENTIAL         =    3.55
                (5) TIRE SLIP            =    5.99
                                 3+4+5   =   10.30
                               2+3+4+5   =   15.19
                (6) AERODYNAMIC DRAG     =   16.06
                (7) ROLLING RESIST       =   31.82
                       SUBTOTAL 1- 7     =   74.83
                (8) BRAKES               =   19.89
                (9) ENGINE MOTORING      =    3.65
                       SUBTOTAL 1- 9     =   98.37
               (10) OTHER ENERGY         =    0.00
                            TOTAL 1-10   =   98.37

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDC001        ROUTE NAME             = LEVEL        AERO DRAG = 22.30, .48
  VEHICLE NAME          = V4000D        ENGINE NAME            = AM258M
  CONVERTER NAME        = CODY2         SHIFT LOGIC NAME       = M3-2
  WEIGHT (LBS)          =  4000.        STROKE (INCHES)        =   3.90
  DISPLACEMENT (CU IN)  =  258.0        REAR AXLE RATIO        =   3.15
  WIND VELOCITY (MPH)   =    0.0        FUEL DENSITY (LB/GAL)  =   6.18
```

Table 5-7. Vehicle Performance Simulation
Reference Case 4000/M-3/3.15/258 CID (Continued)

```
        VEHICLE PERFORMANCE SIMULATION    10/05/76
        ******************************************

RUN TITLE = CASE D(M-3), AMC 258, M-3, 4000LB, 3.15RAR, FTP-HIGHWAY

SCHEDULE AVERAGES       FUEL ECONOMY      = 19.92 MPG
                        WORK PER MILE     =   .48 HP-HR/MI
                        AVG SP FUEL CONS  =   .64 LBS/HP-HR
                        AVG SPEED         = 46.3  MPH

TOTALS                       TOTAL              PERCENT OF TOTAL
        VARIABLE  (UNITS)   AMOUNT  (CRUISE  ACCEL   DECEL    IDLE )  (BRAKES)
        --------  -------   ------   ------  ------  ------   ------   ------
        TIME      (SECS)    760.6     16.3    44.1    38.8      .8
        DISTANCE  (MILES)    10.2     17.9    43.3    38.9     0.0
        ENERGY    (HP-HR)    4.91     17.8    58.7    23.4      .1
        FUEL      (LBS)      3.16     17.5    52.6    29.6      .3          .9

ENERGY SUPPLY                                   HP-HR
                                                -----
                  (1) ENGINE              =     4.91
                  (2) KINETIC ENERGY      =     0.00
                  (3) POTENTIAL ENERGY    =     0.00
                  (4) ROTATING INERTIA    =     0.00

BREAKDOWN                           PERCENT ENGINE HP-HP
                                    --------------------
                  (1) ACCESSORIES         =     9.85
                  (2) TORQUE CONVERTER    =      .14
                  (3) GEAR BOX            =      .03
                  (4) DIFFERENTIAL        =     3.69
                  (5) TIRE SLIP           =     6.20
                                 3+4+5    =     9.92
                               2+3+4+5    =    10.06
                  (6) AERODYNAMIC DRAG    =    38.86
                  (7) ROLLING RESIST      =    36.63
                        SUBTOTAL 1- 7     =    95.41
                  (8) BRAKES              =     3.30
                  (9) ENGINE MOTORING     =     1.21
                        SUBTOTAL 1- 9     =    99.92
                 (10) OTHER ENERGY        =     0.00
                            TOTAL 1-10    =    99.92

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDC002         ROUTE NAME              = LEVEL
  VEHICLE NAME          = V4000D         ENGINE NAME             = AM258M
  CONVERTER NAME        = CODY2          SHIFT LOGIC NAME        = M3-2
  WEIGHT (LBS)          =  4000.         STROKE (INCHES)         =   3.90
  DISPLACEMENT (CU IN)  =   258.0        REAR AXLE RATIO         =   3.15
  WIND VELOCITY (MPH)   =     0.0        FUEL DENSITY (LB/GAL)   =   6.18
```

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Table 5-8. Vehicle Performance Simulation
Reference Case 3500/A/3.21/225 CID

```
              VEHICLE PERFORMANCE SIMULATION   10/06/75
              *****************************************

RUN TITLE = CASE E(A),   CHR 225, AUTO,   3500LB, 3.21 RAR, FTP URBAN

SCHEDULE AVERAGES     FUEL ECONOMY      = 16.88 MPG
                      WORK PER MILE     =   .45 HP-HR/MI
                      AVG SP FUEL CONS  =   .81 LBS/HP-HR
                      AVG SPEED         = 19.5  MPH

TOTALS                        TOTAL          PERCENT OF TOTAL
         VARIABLE (UNITS)    AMOUNT (CRUISE  ACCEL   DECEL   IDLE  ) (BRAKES)
         -------- -------   ------  ------  ------  ------  ------    ------
         TIME     (SECS)   1369.0     8.2    39.2    34.8    17.8
         DISTANCE (MILES)     7.4    12.3    46.2    41.5     0.0
         ENERGY   (HP-HR)     3.36    9.3    80.4     9.2     1.1
         FUEL     (LBS)       2.72    8.9    57.7    23.8     9.7        9.0

ENERGY SUPPLY                                HP-HR
                                             -----
                  (1) ENGINE              =  3.36
                  (2) KINETIC ENERGY      =  0.00
                  (3) POTENTIAL ENERGY    =  0.00
                  (4) ROTATING INERTIA    =  0.00

BREAKDOWN                   PERCENT ENGINE HP-HR
                            --------------------
                  (1) ACCESSORIES         =  12.15
                  (2) TORQUE CONVERTER    =  10.64
                  (3) GEAR BOX            =    .77
                  (4) DIFFERENTIAL        =   3.51
                  (5) TIRE SLIP           =   5.94
                                 3+4+5    =  10.23
                               2+3+4+5    =  20.87
                  (6) AERODYNAMIC DRAG    =  16.09
                  (7) ROLLING RESIST      =  30.42
                         SUBTOTAL 1- 7    =  79.53
                  (8) BRAKES              =  17.59
                  (9) ENGINE MOTORING     =   5.10
                         SUBTOTAL 1- 9    = 102.22
                 (10) OTHER ENERGY        =   0.00
                            TOTAL 1-10    = 102.22

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDCC01       ROUTE NAME             = LEVEL
  VEHICLE NAME          = V3500E       ENGINE NAME            = CY225M
  CONVERTER NAME        = CODY2        SHIFT LOGIC NAME       = TEST2
  WEIGHT (LBS)          =  3500.       STROKE (INCHES)        =   4.12
  DISPLACEMENT (CU IN)  =  224.4       REAR AXLE RATIO        =   3.21
  WIND VELOCITY (MPH)   =    0.0       FUEL DENSITY (LB/GAL)  =   6.18
```

AERO DRAG = 20.50, .48

Table 5-8. Vehicle Performance Simulation
Reference Case 3500/A/3.21/225 CID (Continued)

```
        VEHICLE PERFORMANCE SIMULATION   10/06/76
        ******************************************

RUN TITLE = CASE E(A),   CHR 225, AUTO,   3500LB, 3.21 RAR, FTP HIGHWAY

SCHEDULE AVERAGES      FUEL ECONOMY      = 22.15 MPG
                       WORK PER MILE     =   .46 HP-HR/MI
                       AVG SP FUEL CONS  =   .61 LBS/HP-HR
                       AVG SPEED         = 48.2  MPH

TOTALS                            TOTAL         PERCENT OF TOTAL
        VARIABLE (UNITS)  AMOUNT (CRUISE ACCEL  DECEL   IDLE  ) (BRAKES)
        -------- -------  ------  ------ ------ ------ ------   ------
        TIME     (SECS)   760.5    16.3   44.1   38.8     .8
        DISTANCE (MILES)   10.2    17.9   43.3   38.9    0.0
        ENERGY   (HP-HR)    4.65   17.8   58.6   23.6     .3
        FUEL     (LBS)      2.84   17.7   51.8   30.3     .2       1.4

ENERGY SUPPLY                                HP-HR
                                             -----
                 (1) ENGINE             =    4.65
                 (2) KINETIC ENERGY     =    0.00
                 (3) POTENTIAL ENERGY   =    0.00
                 (4) ROTATING INERTIA   =    0.00

BREAKDOWN                           PERCENT ENGINE HP-HR
                                    --------------------
                 (1) ACCESSORIES        =   11.40
                 (2) TORQUE CONVERTER   =    3.49
                 (3) GEAR BOX           =     .05
                 (4) DIFFERENTIAL       =    3.49
                 (5) TIRE SLIP          =    5.87
                                 3+4+5  =    9.41
                               2+3+4+5  =   12.90
                 (6) AERODYNAMIC DRAG   =   37.71
                 (7) ROLLING RESIST     =   33.83
                         SUBTOTAL 1- 7  =   95.85
                 (8) BRAKES             =    3.10
                 (9) ENGINE MOTORING    =    1.09
                         SUBTOTAL 1- 9  =  100.04
                (10) OTHER ENERGY       =    0.00
                            TOTAL 1-10  =  100.04

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDC002        ROUTE NAME               = LEVEL
  VEHICLE NAME          = V3500E        ENGINE NAME              = CY225M
  CONVERTER NAME        = CODY2         SHIFT LOGIC NAME         = TEST2
  WEIGHT (LBS)          =  3500.        STROKE (INCHES)          =   4.12
  DISPLACEMENT (CU IN)  =  224.4        REAR AXLE RATIO          =   3.21
  WIND VELOCITY (MPH)   =    0.0        FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-9. Vehicle Performance Simulation
Reference Case 3500/M-3/3.21/225 CID

```
          VEHICLE PERFORMANCE SIMULATION   10/07/76
          ****************************************

RUN TITLE = CASE E(M-3)  CHR 225, M-3,    3500LB, 3.21 RAR, FTP URBAN

SCHEDULE AVERAGES      FUEL ECONOMY      = 17.32 MPG
                       WORK PER MILE     =   .43 HP-HR/MI
                       AVG SP FUEL CONS  =   .82 LBS/HP-HR
                       AVG SPEED         = 19.6  MPH

TOTALS                       TOTAL          PERCENT OF TOTAL
          VARIABLE  (UNITS)  AMOUNT  (CRUISE  ACCEL  DECEL   IDLE  ) (BRAKES)
          --------  -------  ------   ------  ------ ------ ------   ------
          TIME      (SECS) 1364.7      9.0   39.6   34.6   17.8
          DISTANCE  (MILES)   7.4     12.0   46.7   41.3    0.0
          ENERGY    (HP-HR)   3.22     9.5   79.6    7.1    2.8
          FUEL      (LBS)     2.64     3.4   57.4   24.2   10.0        6.5

ENEPGY SUPPLY                               HP-HR
                                            -----
                  (1) ENGINE            =   3.22
                  (2) KINETIC ENERGY    =   0.00
                  (3) POTENTIAL ENERGY  =   0.00
                  (4) ROTATING INERTIA  =   0.00

BREAKDOWN                         PERCENT ENGINE HP-HR
                                  --------------------
                  (1) ACCESSORIES       =  12.90
                  (2) TORQUE CONVERTER  =   3.57
                  (3) GEAR BOX          =    .70
                  (4) DIFFERENTIAL      =   3.65
                  (5) TIRE SLIP         =   6.17
                                3+4+5   =  10.52
                              2+3+4+5   =  14.10
                  (6) AERODYNAMIC DRAG  =  16.81
                  (7) ROLLING RESIST    =  31.70
                         SUBTOTAL 1- 7  =  75.50
                  (8) BRAKES            =  18.25
                  (9) ENGINE MOTORING   =   4.85
                         SUBTOTAL 1- 9  =  98.60
                 (10) OTHER ENERGY      =   0.00
                            TOTAL 1-10  =  98.60

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDC001        ROUTE NAME               = LEVEL
  VEHICLE NAME          = V3500E        ENGINE NAME              = CY225M
  CONVERTER NAME        = CODY2         SHIFT LOGIC NAME         = M3-2
  WEIGHT (LBS)          =  3500.        STROKE (INCHES)          =   4.12
  DISPLACEMENT (CU IN)  =  224.4        REAR AXLE RATIO          =   3.21
  WIND VELOCITY (MPH)   =    0.0        FUEL DENSITY (LB/GAL)    =   6.18
```

AERO DRAG = 20.50, .48

Table 5-9. Vehicle Performance Simulation
Reference Case 3500/M-3/3.21/225 CID (Continued)

```
          VEHICLE PERFORMANCE SIMULATION   10/07/76
          ******************************************

RUN TITLE = CASE E(M-3)  CHR 225, M-3,     3500L3, 3.21 RAR, FTP HIGHWAY

SCHEDULE AVERAGES       FUEL ECONOMY      = 23.02 MPG
                        WORK PER MILE     =   .44 HP-HR/MI
                        AVG SP FUEL CONS  =   .61 LBS/HP-HR
                        AVG SPEED         = 48.3  MPH

TOTALS                           TOTAL          PERCENT OF TOTAL
          VARIABLE  (UNITS)  AMOUNT  (CRUISE ACCEL  DECEL   IDLE  ) (BRAKES)
          --------  -------  ------  ------ ------  ------  ------   ------
          TIME      (SECS)   760.4    16.3   44.1   38.8      .9
          DISTANCE  (MILES)   10.2    17.9   43.3   38.9     0.0
          ENERGY    (HP-HR)    4.47   17.9   58.2   23.9      .1
          FUEL      (LBS)      2.74   17.7   51.5   33.6      .2      1.2

ENERGY SUPPLY                                  HP-HR
                                               -----
                  (1) ENGINE                =  4.47
                  (2) KINETIC ENERGY        =  0.00
                  (3) POTENTIAL ENERGY      =  0.00
                  (4) ROTATING INERTIA      =  0.00

BREAKDOWN                         PERCENT ENGINE HP-HR
                                  --------------------
                  (1) ACCESSORIES           =  11.39
                  (2) TORQUE CONVERTER      =    .10
                  (3) GEAR BOX              =    .03
                  (4) DIFFERENTIAL          =   3.63
                  (5) TIRE SLIP             =   6.11
                                3+4+5       =   9.77
                              2+3+4+5       =   9.87
                  (6) AERODYNAMIC DRAG      =  39.25
                  (7) ROLLING RESIST        =  35.21
                        SUBTOTAL 1- 7       =  95.71
                  (8) BRAKES                =   3.06
                  (9) ENGINE MOTORING       =   1.16
                        SUBTOTAL 1- 9       =  99.94
                 (10) OTHER ENERGY          =   0.20
                             TOTAL 1-10     =  99.94

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDCCO2        ROUTE NAME               = LEVEL
  VEHICLE NAME          = V3500E        ENGINE NAME              = CY225M
  CONVERTER NAME        = CODY2         SHIFT LOGIC NAME         = M3-2
  WEIGHT (LBS)          =  3500.        STROKE (INCHES)          =   4.12
  DISPLACEMENT (CU IN)  =  224.4        REAR AXLE RATIO          =   3.21
  WIND VELOCITY (MPH)   =    0.0        FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-10. Vehicle Performance Simulation
Reference Case 3000/M-3/2.92/140 CID

```
          VEHICLE PERFORMANCE SIMULATION   10/09/76
          ******************************************

RUN TITLE = CASE F(M3),     GM140, M-3, 3000LB, 2.92RAR, FTP URBAN

SCHEDULE AVERAGES       FUEL ECONOMY     = 22.40 MPG
                        WORK PER MILE    =   .39 HP-HR/MI
                        AVG SP FUEL CONS =   .70 LBS/HP-HR
                        AVG SPEED        = 19.6  MPH

TOTALS                 TOTAL          PERCENT OF TOTAL
          VARIABLE (UNITS) AMOUNT (CRUISE ACCEL  DECEL   IDLE ) (BRAKES)
          -------- ------- ------ ------ ------ ------  ------  ------
          TIME     (SECS) 1367.5    8.0   39.5   34.7   17.8
          DISTANCE (MILES)   7.4   12.0   46.6   41.4    0.0
          ENERGY   (HP-HR)   2.91   8.6   79.1    9.5    2.8
          FUEL     (LBS)     2.05   9.8   66.1   16.2    7.9      1.3

ENERGY SUPPLY                                HP-HR
                                             -----
                  (1) ENGINE           =     2.91
                  (2) KINETIC ENERGY   =     0.00
                  (3) POTENTIAL ENERGY =     0.00
                  (4) ROTATING INERTIA =     0.00

BREAKDOWN                         PERCENT ENGINE HP-HR
                                  --------------------
                  (1) ACCESSORIES        =  15.62
                  (2) TORQUE CONVERTER   =   3.36
                  (3) GEAR BOX           =    .80
                  (4) DIFFERENTIAL       =   3.40
                  (5) TIRE SLIP          =   5.74
                                3+4+5    =   9.94
                              2+3+4+5    =  13.30
                  (6) AERODYNAMIC DRAG   =  16.76
                  (7) ROLLING RESIST     =  30.16
                         SUBTOTAL 1- 7   =  75.84
                  (8) BRAKES             =  20.92
                  (9) ENGINE MOTORING    =    .95
                         SUBTOTAL 1- 9   =  97.72
                 (10) OTHER ENERGY       =   0.00
                            TOTAL 1-10   =  97.72

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDC001       ROUTE NAME              = LEVEL
  VEHICLE NAME          = V3000F       ENGINE NAME             = GM140M
  CONVERTER NAME        = CODY2        SHIFT LOGIC NAME        = M3-2
  WEIGHT (LBS)          =  3000.       STROKE (INCHES)         =   3.63
  DISPLACEMENT (CU IN)  =  139.6       REAR AXLE RATIO         =   2.92
  WIND VELOCITY (MPH)   =    0.0       FUEL DENSITY (LB/GAL)   =   6.18
```

AERO DRAG = 18.4, .48

Table 5-10. Vehicle Performance Simulation
Reference Case 3000/M-3/2.92/140 CID (Continued)

```
          VEHICLE PERFORMANCE SIMULATION    10/09/76
          ******************************************

RUN TITLE = CASE F(M3),      GM140, M-3, 3000LB, 2.92RAR, FTP HIGHWAY

SCHEDULE AVERAGES     FUEL ECONOMY      =  26.77 MPG
                      WORK PER MILE     =    .39 HP-HR/MI
                      AVG SP FUEL CONS  =    .59 LBS/HP-HR
                      AVG SPEED         =  48.2  MPH

TOTALS                         TOTAL              PERCENT OF TOTAL
          VARIABLE  (UNITS)    AMOUNT   (CRUISE  ACCEL   DECEL    IDLE )  (BRAKES)
          --------  -------    ------   ------   ------  ------   ------  ------
          TIME      (SECS)     763.1     16.3    44.3    38.6      .8
          DISTANCE  (MILES)     14.2     17.8    43.4    38.7     0.0
          ENERGY    (HP-HR)     4.00     17.9    58.0    24.1      .1
          FUEL      (LBS)       2.36     17.8    52.2    29.9      .2        .5

ENERGY SUPPLY                                      HP-HR
                                                   -----
                (1) ENGINE                    =    4.00
                (2) KINETIC ENERGY            =    0.00
                (3) POTENTIAL ENERGY          =    0.00
                (4) ROTATING INERTIA          =    0.00

BREAKDOWN                           PERCENT ENGINE HP-HR
                                    --------------------
                (1) ACCESSORIES               =   13.02
                (2) TORQUE CONVERTER          =     .09
                (3) GEAR BOX                  =     .03
                (4) DIFFERENTIAL              =    3.56
                (5) TIRE SLIP                 =    5.98
                                  3+4+5       =    9.57
                                2+3+4+5       =    9.66
                (6) AERODYNAMIC DRAG          =   39.42
                (7) ROLLING RESIST            =   33.80
                       SUBTOTAL 1- 7          =   95.90
                (8) BRAKES                    =    3.19
                (9) ENGINE MOTORING           =     .81
                       SUBTOTAL 1- 9          =   99.91
               (10) OTHER ENERGY              =    0.00
                          TOTAL 1-10          =   99.91

ADDITIONAL RUN DATA

    DRIVING SCHEDULE NAME = HDC002         ROUTE NAME               = LEVEL
    VEHICLE NAME          = V3C00F         ENGINE NAME              = GM140M
    CONVERTER NAME        = CODY2          SHIFT LOGIC NAME         = M3-2
    WEIGHT (LBS)          =  3000.         STROKE (INCHES)          =   3.63
    DISPLACEMENT (CU IN)  =  139.6         REAR AXLE RATIO          =   2.92
    WIND VELOCITY (MPH)   =    0.0         FUEL DENSITY (LB/GAL)    =   6.18
```

Table 5-11. Vehicle Performance Simulation
Reference Case 2500/M-4/3.70/140 CID

```
          VEHICLE PERFORMANCE SIMULATION   10/10/76
          ********************************************

RUN TITLE - CASE G(M-4), SCALED GM140, M-4, 2500LB, 3.70RAR, FTP URBAN

SCHEDULE AVERAGES      FUEL ECONOMY      = 21.15 MPG
                       WORK PER MILE     =   .41 HP-HR/MI
                       AVG SP FUEL CONS  =   .71 LBS/HP-HR
                       AVG SPEED         = 19.5  MPH

TOTALS                        TOTAL              PERCENT OF TOTAL
          VARIABLE (UNITS) AMOUNT (CRUISE ACCEL  DECEL   IDLE ) (BRAKES)
          -------- ------- ------  ------ ------ ------  ------  ------
          TIME     (SECS) 1349.4     8.2   38.7   35.0    18.0
          DISTANCE (MILES)   7.3    12.3   45.8   41.9     0.0
          ENERGY   (HP-HR)   3.00    9.2   77.2   11.5     2.0
          FUEL     (LBS)     2.14   10.1   63.1   21.4     5.4      2.4

ENERGY SUPPLY                               HP-HR
                                            -----
                       (1) ENGINE          =  3.00
                       (2) KINETIC ENERGY  =  0.00
                       (3) POTENTIAL ENERGY = 0.00
                       (4) ROTATING INERTIA = 0.00

BREAKDOWN                         PERCENT ENGINE HP-HR
                                  --------------------
                       (1) ACCESSORIES        =  28.34
                       (2) TORQUE CONVERTER   =   1.42
                       (3) GEAR BOX           =   1.61
                       (4) DIFFERENTIAL       =   3.15
                       (5) TIRE SLIP          =   5.33
                                     3+4+5    =  10.08
                                   2+3+4+5    =  11.51
                       (6) AERODYNAMIC DRAG   =  15.77
                       (7) ROLLING RESIST     =  24.06
                              SUBTOTAL 1- 7   =  79.67
                       (8) BRAKES             =  14.78
                       (9) ENGINE MOTORING    =   2.84
                              SUBTOTAL 1- 9   =  97.29
                      (10) OTHER ENERGY       =   0.00
                                 TOTAL 1-10   =  97.29

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDCC01          ROUTE NAME               = LEVEL
  VEHICLE NAME          = V2500G          ENGINE NAME              = GM1404
  CONVERTER NAME        = CODY2           SHIFT LOGIC NAME         = M4-2
  WEIGHT (LBS)          =   2500.         STROKE (INCHES)          =   2.98
  DISPLACEMENT (CU IN)  =    97.6         REAR AXLE RATIO          =   3.70
  WIND VELOCITY (MPH)   =     0.0         FUEL DENSITY (LB/GAL)    =   6.18
```

AERO DRAG = 18.00, .48

Table 5-11. Vehicle Performance Simulation
Reference Case 2500/M-4/3.70/140 CID (Continued)

```
          VEHICLE PERFORMANCE SIMULATION    10/10/76
          ******************************************

RUN TITLE = CASE G(M-4), SCALED GM140, M-4, 2500LB, 3.70RAR, FTP HIGHWAY

SCHEDULE AVERAGES       FUEL ECONOMY       = 27.71 MPG
                        WORK PER MILE      =   .39 HP-HR/MI
                        AVG SP FUEL CONS   =   .57 LBS/HP-HR
                        AVG SPEED          = 48.3  MPH

TOTALS                           TOTAL             PERCENT  OF TOTAL
          VARIABLE  (UNITS)     AMOUNT  (CRUISE  ACCEL   DECEL    IDLE  ) (BRAKES)
          --------  -------     ------  ------   ------  ------   ------   ------
          TIME      (SECS)      758.5    16.4     44.1    38.7      .8
          DISTANCE  (MILES)      10.2    17.9     43.3    38.8     0.0
          ENERGY    (HP-HR)      4.00    18.1     56.3    25.5      .0
          FUEL      (LBS)        2.27    17.8     51.8    30.2      .1        .5

ENERGY SUPPLY                                   HP-HR
                                                -----
                  (1) ENGINE             =      4.00
                  (2) KINETIC ENERGY     =      0.00
                  (3) POTENTIAL ENERGY   =      0.00
                  (4) ROTATING INERTIA   =      0.00

BREAKDOWN                        PERCENT ENGINE HP-HR
                                 --------------------
                  (1) ACCESSORIES        =     20.08
                  (2) TORQUE CONVERTER   =       .04
                  (3) GEAR BOX           =      1.64
                  (4) DIFFERENTIAL       =      3.22
                  (5) TIRE SLIP          =      5.42
                                3+4+5    =     10.28
                              2+3+4+5    =     10.32
                  (6) AERODYNAMIC DRAG   =     38.45
                  (7) ROLLING RESIST     =     28.04
                         SUBTOTAL 1- 7   =     96.89
                  (8) BRAKES             =      2.43
                  (9) ENGINE MOTORING    =       .60
                         SUBTOTAL 1- 9   =     99.92
                 (10) OTHER ENERGY       =      0.00
                           TOTAL 1-10    =     99.92

ADDITIONAL RUN DATA

   DRIVING SCHEDULE NAME = HDC002        ROUTE NAME                = LEVEL
   VEHICLE NAME          = V2500G        ENGINE NAME               = GM1404
   CONVERTER NAME        = CODY2         SHIFT LOGIC NAME          = M4-2
   WEIGHT (LBS)          =  2500.        STROKE (INCHES)           =   2.98
   DISPLACEMENT (CU IN)  =   97.6        REAR AXLE RATIO           =   3.70
   WIND VELOCITY (MPH)   =    0.0        FUEL DENSITY (LB/GAL)     =   6.18
```

Table 5-12. Reference Vehicle
VSIMI Results for Weighted Calibration Factors

Displ.	Inertia Weight	Trans.	Axle Ratio	Weighted Advance		Weighted Air-Fuel Ratio	
				Urban	Hwy.	Urban	Hwy.
400	5000	A	3.08	24.99	33.00	15.69	15.90
350	5000	A	3.08	23.54	31.48	15.56	15.86
350	4500	A	3.08	23.63	31.72	15.59	15.90
350	5000	A	2.73	22.44	28.98	15.48	15.91
318	4500	A	3.21	34.61	42.40	18.55	16.99
318	4500	M-3	3.21	33.88	41.84	19.02	17.03
258	4000	A	3.15	16.34	24.90	16.74	16.19
258	4000	M-3	3.15	15.02	23.75	16.27	16.23
225	3500	A	3.21	19.37	30.96	16.33	16.06
225	3000	A	3.21	19.75	31.88	16.33	16.08
225	3500	A	2.76	16.78	27.63	16.26	15.93
225	3500	M-3	3.21	18.99	30.65	16.41	16.11
225	3000	M-3	3.21	19.48	31.56	16.48	16.13
225	3500	M-3	2.76	15.36	27.01	16.30	16.00
140	3000	M-3	2.92	13.40	18.33	18.67	15.72
140	2500	M-3	2.92	13.47	18.88	19.13	15.72
140	3000	M-3	3.21	14.46	21.07	18.64	15.56
97.6	2500	M-4	3.70	17.37	19.90	18.00	15.62

Table 5-13. Weight Sensitivity Factor (WTSF)

CID	IW	TRAN	AR	N/V	(WTSF) ADV		(WTSF) A/F	
					URBAN	HWY	URBAN	HWY
350	5000 4500	A A	3.08 3.08	34.8 34.8	-0.038	-0.076	-0.019	-0.025
225	3500 3000	A A	3.21 3.21	44.0 44.0	-0.137	-0.208	0.0	-0.009
225	3500 3000	M3 M3	3.21 3.21	44.0 44.0	-0.181	-0.208	-0.030	-0.009
140	3000 2500	M3 M3	2.92 2.92	43.0 43.0	-0.031	-0.180	-0.148	0.0
				MEAN:	-0.097	-0.168	-0.049	-0.011

Table 5-14. Speed Ratio Sensitivity Factor (SRSF)

CID	IW	TRAN	AR	N/V	(SRSF) ADV		(SRSF) A/F	
					URBAN	HWY	URBAN	HWY
350	5000	A	3.08 2.73	38.8 34.4	0.412	0.700	0.045	-0.028
225	3500	A	3.21 2.76	44.0 37.6	0.919	0.739	0.029	0.056
225	3500	M3	3.21 2.76	44.0 37.6	1.314	0.816	0.046	0.047
140	3000	M3	2.92 3.21	43.0 47.6	0.739	1.397	-0.015	-0.095
				MEAN:	0.846	0.913	0.026	-0.005

Table 5-15. Displacement Sensitivity Factor (DSF)

CID	IW	TRAN	AR	N/V	(DSF) ADV		(DSF) A/F	
					URBAN	HWY	URBAN	HWY
400 350	5000 5000	A A	3.08 3.08	38.8 38.8	0.464	0.368	0.066	0.020
225 140	3000 3000	M3 M3	3.21 3.21	44.0 44.0	0.682	0.880	-0.347	0.094
				MEAN:	0.573	0.624	-0.141	0.057

Table 5-16. Transmission Sensitivity Factor (TSF)

CID	IW	TRAN	AR	N/V	(TSF) ADV URBAN	(TSF) ADV HWY	(TSF A/F URBAN	(TSF A/F HWY
318	4500	A M3	3. 21 3. 21	40. 9 40. 9	-0. 021	-0. 013	0. 054	0. 002
258	4000	A M3	3. 15 3. 15	39. 0 39. 0	-0. 081	-0. 046	-0. 028	0. 002
225	3500	A M3	3. 21 3. 21	44. 0 44. 0	-0. 020	-0. 010	0. 005	0. 003
225	3500	A M3	2. 76 2. 76	44. 0 44. 0	-0. 085	-0. 022	0. 002	0. 004
225	3000	A M3	3. 21 3. 21	44. 0 44. 0	-0. 014	-0. 010	0. 009	0. 003
				MEAN:	-0. 044	-0. 020	0. 008	0. 003

Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID

```
*****************************************************************************************************
* PROGRAM VSIMII *   400CID, AUTOMATIC, 5000LB, 38.8N/V            *  RUN ON  10/30/76  AT  11.13.53   PAGE  1 *
*****************************************************************************************************
*                         *                                        *       FTP-URBAN      *      FTP-HIGHWAY     *
*                         *                                        ***********************************************
*                         *                                        *    FUEL WEIGHTED     *    FUEL WEIGHTED     *
*                         *                                        ***********************************************
*                         *                                        *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                         *                                        * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
*****************************************************************************************************
*                                                                     *                    *                    *
* REFERENCE VALUE                                                     *                    *                    *
* DISTRIBUTOR  3228266       AND CARBURETOR  SF3227439                *  25.81     14.85   *  24.81     15.70   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                    *                    *
* AMC    MATADOR        D58-330(T)      C 401 4V A  4500 3.54 44.4 464 *  29.29     14.98   *  33.21     15.71   *
*                                                                     *                    *                    *
* REFERENCE VALUE                                                     *                    *                    *
* DISTRIBUTOR  3228265       AND CARBURETOR  SF3227439                *  19.07     14.86   *  23.18     15.70   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                    *                    *
* AMC    MATADOR WGN    D58-40R(T)      F 401 4V A  4500 3.54 44.4  26 *  21.53     14.93   *  26.72     15.71   *
*                                                                     *                    *                    *
* REFERENCE VALUE                                                     *                    *                    *
* DISTRIBUTOR  3874101-400  AND CARBURETOR  4006621-400               *  23.93     16.14   *  33.05     16.31   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                    *                    *
* CHRYSL PLYMOUTH        2226           F 400 2V A  4500 3.23 42.1  27 *  25.90     16.25   *  36.22     16.32   *
* CHRYSL CHRYSLER        2228           F 400 2V A  5000 2.71 33.3  30 *  21.05     16.39   *  28.78     16.32   *
* CHRYSL PLY. WGN        2234           F 400 2V A  5500 2.71 32.5  32 *  22.44     15.99   *  27.58     16.31   *
* CHRYSL GRAN FURY       4079           F 400 2V A  5500 3.21 39.6  33 *  24.11     16.07   *  33.11     16.29   *
* CHRYSL GRAN FURY       4089           F 400 2V A  5000 2.45 29.2  29 *  18.92     16.33   *  25.59     16.33   *
*                                                                     *                    *                    *
* REFERENCE VALUE                                                     *                    *                    *
* DISTRIBUTOR  3874110-400  AND CARBURETOR  3830569-400               *  24.91     15.49   *  33.80     16.19   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                    *                    *
* CHRYSL PLYMOUTH        2101           F 400 4V A  5000 3.21 40.2  72 *  25.67     15.51   *  34.91     16.18   *
* CHRYSL PLYMOUTH        2221           F 400 4V A  4500 3.21 41.8  73 *  26.83     15.60   *  36.79     16.20   *
* CHRYSL CORONET         4068           F 400 4V A  4500 2.45 30.9  69 *  25.33     15.48   *  27.25     16.22   *
*                                                                     *                    *                    *
* REFERENCE VALUE                                                     *                    *                    *
* DISTRIBUTOR  3874786-400  AND CARBURETOR  4006640-400               *    .54     16.60   *   1.65     17.71   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                    *                    *
* CHRYSL CHRYS. CL41     4080           F 400 4V A  5000 2.71 33.6  74 *    .48     16.54   *   1.45     17.72   *
* CHRYSL NEW YORKER      4081           F 400 4V A  5000 3.21 40.9  76 *    .57     16.62   *   1.74     17.70   *
* CHRYSL CHRYS. CP46     4082           F 400 4V A  5500 2.71 32.7  77 *    .47     16.45   *   1.39     17.70   *
* CHRYSL NEWPORT         4083           F 400 4V A  5000 2.45 29.2  73 *    .43     16.49   *   1.28     17.73   *
* CHRYSL CHRYS WGN       4100           F 400 4V A  5500 3.21 34.8  73 *    .54     16.52   *   1.53     17.69   *
*                                                                     *                    *                    *
* REFERENCE VALUE                                                     *                    *                    *
* DISTRIBUTOR  3874110-400  AND CARBURETOR  4006642-400               *  25.04     15.64   *  33.87     16.21   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                    *                    *
* CHRYSL PLYMOUTH        4157           C 400 4V A  5500 2.71 32.3 475 *  21.29     15.50   *  28.21     16.21   *
* CHRYSL CHARGER         4166           C 400 4V A  4500 3.21 41.9 470 *  25.94     15.75   *  36.87     16.22   *
* CHRYSL DODGE           4168           C 400 4V A  5500 3.21 39.6 475 *  25.23     15.57   *  33.93     16.19   *
* CHRYSL DODGE           4179           C 400 4V A  5000 2.71 33.6 471 *  22.27     15.59   *  29.73     16.22   *
*****************************************************************************************************
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Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID (Continued)

```
*********************************************************************************************************
* PROGRAM VSIMII *   400CID, AUTOMATIC, 5000LB, 38.8N/V        *  RUN ON  10/30/76  AT  11.13.53   PAGE  2 *
*********************************************************************************************************
*                         *                                    *       FTP-URBAN       *     FTP-HIGHWAY       *
*                         *                                    ************************************************
*                         *                                    *    FUEL WEIGHTED      *    FUEL WEIGHTED      *
*                         *                                    ************************************************
*                         *                                    *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL  *
*                         *                                    * (DEGREE) *   RATIO   * (DEGREE) *   RATIO   *
*********************************************************************************************************
*                                                                    *                     *                  *
* REFERENCE VALUE                                                    *                     *                  *
* DISTRIBUTOR  3874596-440  AND CARBURETOR  4006631-440              *   25.10     15.81   *   33.92    16.07   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                  *
* CHRYSL CHRYSLER      4063           F 440 4V A  5500 2.71 33.4  34 *   23.13     15.43   *   33.93    16.15   *
* CHRYSL CHRYSLER      4064           F 440 4V A  5500 3.21 39.6  35 *   26.74     15.51   *   36.10    16.14   *
* CHRYSL CHRYSLER      4066           F 440 4V A  5501 3.21 35.1  36 *   24.16     15.47   *   32.35    16.15   *
* CHRYSL CHRYSLER      4074           F 440 4V A  5000 3.21 40.9  31 *   27.75     15.60   *   37.82    16.16   *
*                                                                    *                     *                  *
* REFERENCE VALUE                                                    *                     *                  *
* DISTRIBUTOR  3874173-440  AND CARBURETOR  4006648-440              *   23.62     15.74   *   29.81    16.14   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                  *
* CHRYSL PLY. FURY     4103           F 440 4V A  4500 3.21 39.9  28 *   25.82     15.61   *   33.03    16.25   *
*                                                                    *                     *                  *
* REFERENCE VALUE                                                    *                     *                  *
* DISTRIBUTOR  3874596-440  AND CARBURETOR  4006632-440              *   25.10     16.08   *   33.92    16.39   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                  *
* CHRYSL CHRYSLER      4169           C 440 4V A  5500 2.71 33.4 477 *   23.18     15.72   *   30.93    16.47   *
* CHRYSL CHRYSLER      4170           C 440 4V A  5500 3.21 39.9 479 *   26.91     15.79   *   36.35    16.46   *
* CHRYSL DODGE         4172           C 440 4V A  5000 3.21 40.9 472 *   27.75     15.80   *   37.82    16.48   *
* CHRYSL PLYMOUTH      4225           C 440 4V A  5500 2.71 32.3 478 *   22.53     15.71   *   33.32    16.48   *
*                                                                    *                     *                  *
* REFERENCE VALUE                                                    *                     *                  *
* DISTRIBUTOR  3874173-440  AND CARBURETOR  4006649-440              *   23.59     15.93   *   29.79    16.15   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                  *
* CHRYSL DODGE MONACO  4188           C 440 4V A  5000 3.21 39.9 474 *   25.54     15.72   *   32.47    16.24   *
*                                                                    *                     *                  *
* REFERENCE VALUE                                                    *                     *                  *
* DISTRIBUTOR  D5TE12127ZA  AND CARBURETOR  D5TE-9510BDB             *   19.66     13.81   *   26.56    14.91   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                  *
* FORD   F-100         6F1-390-4-3C   C 390 2V A  4500 3.25 41.0 913 *   20.50     13.95   *   27.96    14.90   *
*                                                                    *                     *                  *
* REFERENCE VALUE                                                    *                     *                  *
* DISTRIBUTOR  D5TE12127RA  AND CARBURETOR  D5TE-9510BEB             *   22.08     14.72   *   29.23    15.26   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                  *
* FORD   F-100         6F1-390-4-1F   F 390 2V A  5000 3.00 35.0 823 *   19.96     14.73   *   26.20    15.24   *
* FORD   F-100         6F1-390-4-2F   F 390 2V A  4500 3.00 35.0 818 *   20.15     14.81   *   26.64    15.26   *
*                                                                    *                     *                  *
* REFERENCE VALUE                                                    *                     *                  *
* DISTRIBUTOR  D6AE12127AA  AND CARBURETOR  D6ME-9510-3A             *   33.70     16.39   *   39.90    16.68   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                  *
* FORD   FORD SW       6A1-400-4-28R  F 400 2V A  5500 2.75 33.0 133 *   29.15     16.25   *   33.87    16.07   *
*********************************************************************************************************
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Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID (Continued)

```
************************************************************************************************************************
* PROGRAM VSIMII *   400CID, AUTOMATIC, 5000LB, 38.8N/V            * RUN ON  10/30/76  AT  11.13.53    PAGE  3 *
************************************************************************************************************************
*                                  *                               *       FTP-URBAN       *      FTP-HIGHWAY        *
*                                  *                               *************************************************
*                                  *                               *     FUEL WEIGHTED     *     FUEL WEIGHTED       *
*                                  *                               *************************************************
*                                  *                               * ADVANCE  * AIR/FUEL   * ADVANCE  * AIR/FUEL     *
*                                  *                               * (DEGREE) *   RATIO    * (DEGREE) *   RATIO      *
************************************************************************************************************************
*                                                                      *                        *                          *
* REFERENCE VALUE                                                      *                        *                          *
* DISTRIBUTOR  D6AE12127AA  AND CARBURETOR  D6AE-9510-HB               *   33.70      15.52     *   39.90      15.78       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                        *                          *
* FORD   FORD        6A1-400-4-17R  F 400 2V A  5000 2.75 34.0 129     *   30.17      15.47     *   35.39      15.79       *
* FORD               6O1-400-4-21R  F 400 2V A  4500 2.75 35.0 126     *   31.21      15.55     *   36.94      15.80       *
*                                                                      *                        *                          *
* REFERENCE VALUE                                                      *                        *                          *
* DISTRIBUTOR  D5AE12127KA  AND CARBURETOR  D5WE-9510-EA               *   30.20      15.16     *   35.87      15.58       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                        *                          *
* FORD               5A1-400-4-140R                                    *                        *                          *
* FORD               5A1-400-4-147R                                    *                        *                          *
* FORD               5O1-400-4-159R                                    *                        *                          *
*                                                                      *                        *                          *
* REFERENCE VALUE                                                      *                        *                          *
* DISTRIBUTOR  D6AE12127AA  AND CARBURETOR  D6ME-9510-AA               *   33.55      14.70     *   39.89      15.11       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                        *                          *
* FORD   FORD        6A1-400-4-1R   C 400 2V A  5000 2.75 33.6 527     *   29.75      14.65     *   35.01      15.12       *
* FORD   FORD SW     6A1-400-4-2R   C 400 2V A  5500 2.75 32.3 532     *   28.89      14.57     *   33.69      15.11       *
* FORD   RANCHERO    6O1-400-4-3R   C 400 2V A  4500 2.75 34.9 523     *   31.00      14.73     *   35.84      15.14       *
*                                                                      *                        *                          *
* REFERENCE VALUE                                                      *                        *                          *
* DISTRIBUTOR  D6VE12127AA  AND CARBURETOR  D6AE-9510-BA               *   33.49      14.87     *   38.25      15.36       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                        *                          *
* FORD   FORD        6A1-460-4-2D   C 460 4V A  5000 2.75 34.1 529     *   29.72      14.51     *   37.20      15.50       *
* FORD   TORINO      6O1-460-4-13D  C 460 4V A  5000 3.00 38.1 531     *   32.61      14.55     *   41.14      15.49       *
* FORD   MARK IV     6L1-460-4-9D   C 460 4V A  5500 2.75 33.2 534     *   25.79      14.43     *   35.71      15.49       *
* FORD   THUNDERBIRD 6S1-460-4-24D  C 460 4V A  5500 3.00 37.1 536     *   31.59      14.47     *   39.48      15.48       *
*                                                                      *                        *                          *
* REFERENCE VALUE                                                      *                        *                          *
* DISTRIBUTOR  D6VE12127BA  AND CARBURETOR  D6AE-9510-EA               *   34.57      15.93     *   44.58      16.82       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                        *                          *
* FORD   FORD        6A1-460-4-7G   F 460 4V A  5000 2.75 32.8 131     *   32.65      15.33     *   41.87      16.98       *
* FORD   RANCHERO    6O1-460-4-10G  F 460 4V A  5000 3.00 38.1 132     *   35.97      15.38     *   47.95      16.96       *
* FORD   MARK IV     6L1-460-4-12G  F 460 4V A  5500 3.00 36.2 137     *   35.09      15.49     *   45.06      16.95       *
* FORD   THUNDERBIRD 6S1-460-4-22G  F 460 4V A  5500 2.75 34.0 135     *   33.31      15.46     *   42.52      16.95       *
*                                                                      *                        *                          *
* REFERENCE VALUE                                                      *                        *                          *
* DISTRIBUTOR  D5VE-12127CA AND CARBURETOR  D5AE-9510-RA               *   25.45      15.29     *   33.25      16.21       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                        *                          *
* FORD               5A1-460-4-111F                                    *                        *                          *
* FORD               5O1-460-4-117F                                    *                        *                          *
* FORD               5O1-460-4-119F                                    *                        *                          *
* FORD               5S1-460-4-116F                                    *                        *                          *
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Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID (Continued)

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************************************************************************************************************
* PROGRAM VSIMII *    400CID, AUTOMATIC, 5000LB, 38.8N/V           *  RUN ON  10/30/76  AT  11.13.53   PAGE  4 *
************************************************************************************************************
*                          *                                      *       FTP-URBAN       *    FTP-HIGHWAY     *
*                          *                                      ******************************************
*                          *                                      *    FUEL WEIGHTED      *   FUEL WEIGHTED    *
*                          *                                      ******************************************
*                          *                                      *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL*
*                          *                                      * (DEGREE) *   RATIO   * (DEGREE) *  RATIO  *
************************************************************************************************************
*                                                                       *                   *                   *
* REFERENCE VALUE                                                       *                   *                   *
* DISTRIBUTOR  D4VE-12127CA AND CARBURETOR  D6VE-9510-CA                *  19.57    15.27    *  27.18    16.21    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                   *                   *
* FORD                      5A1-460-4-52F                               *                   *                   *
* FORD                      5M1-460-4-50F                               *                   *                   *
* FORD                      5O1-460-4-88F                               *                   *                   *
* FORD                      5O1-460-4-91F                               *                   *                   *
* FORD                      5S1-460-4-66F                               *                   *                   *
*                                                                       *                   *                   *
* REFERENCE VALUE                                                       *                   *                   *
* DISTRIBUTOR  110320309444 AND CARBURETOR  17056228N595                *  18.20    15.84    *  24.77    16.35    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                   *                   *
* GMC    CAPRICE          131E             F 400 4V A  5000 2.73 33.9 235  *  16.25    15.79    *  21.92    16.36    *
*                                                                       *                   *                   *
* REFERENCE VALUE                                                       *                   *                   *
* DISTRIBUTOR  111288808546 AND CARBURETOR  17056207N887                *  22.39    16.27    *  31.30    16.94    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                   *                   *
* GMC    CORVETTE         135E             F 350 4V A  4500 3.36 42.7 217  *  21.98    16.90    *  31.92    16.90    *
*                                                                       *                   *                   *
* REFERENCE VALUE                                                       *                   *                   *
* DISTRIBUTOR  1103203-9454 AND CARBURETOR  17056228N148                *  17.59    15.92    *  23.87    16.38    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                   *                   *
* GMC    IMPALA           134F             F 400 4V A  5000 2.56 31.3 234  *  14.71    15.74    *  19.65    16.40    *
*                                                                       *                   *                   *
* REFERENCE VALUE                                                       *                   *                   *
* DISTRIBUTOR  111288209446 AND CARBURETOR  17056528N599                *  17.03    15.83    *  23.27    16.41    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                   *                   *
* GMC    IMPALA           596C             C 400 4V A  5000 2.56 31.3 588  *  14.24    15.75    *  19.16    16.42    *
*                                                                       *                   *                   *
* REFERENCE VALUE                                                       *                   *                   *
* DISTRIBUTOR  111288209445 AND CARBURETOR  17056528N602                *  16.53    15.79    *  23.17    16.36    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                   *                   *
* GMC    CAPRICE WGN      594C             C 400 4V A  5500 2.73 32.5 349  *  14.12    15.64    *  19.40    16.30    *
*                                                                       *                   *                   *
* REFERENCE VALUE                                                       *                   *                   *
* DISTRIBUTOR  110320309455 AND CARBURETOR  17056228N654                *  17.30    15.98    *  23.68    16.55    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                   *                   *
* GMC    CAPRICE SW       133F             F 400 4V A  5500 3.08 36.9 237  *  16.43    15.88    *  22.24    16.54    *
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Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID (Continued)

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********************************************************************************************************
* PROGRAM VSIMII *   400CID, AUTOMATIC, 5000LB, 38.8N/V          *  RUN ON  10/30/76  AT  11.13.53   PAGE  5 *
********************************************************************************************************
*                              *                                 *       FTP-URBAN      *     FTP-HIGHWAY     *
*                              *                                 ****************************************
*                              *                                 *    FUEL WEIGHTED     *    FUEL WEIGHTED    *
*                              *                                 ****************************************
*                              *                                 *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                              *                                 * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
********************************************************************************************************
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *                    *                    *
* DISTRIBUTOR  11128209446 AND CARBURETOR  17056528N600                 *  16.77     15.80   *  23.55     16.38   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* GMC     MALIBU         595C            C 400 4V A  4500 3.08 39.6 586 *  17.22     15.89   *  24.39     16.40   *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *                    *                    *
* DISTRIBUTOR  1112500-9507 AND CARBURETOR  17056160-4                  *  25.32     16.26   *  31.93     16.70   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* GMC     LE MANS        214F            F 400 2V A  4500 2.41 29.9 270 *  20.61     16.24   *  25.66     16.74   *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *                    *                    *
* DISTRIBUTOR  1112958-9345 AND CARBURETOR  17056264-39                 *  25.62     15.99   *  30.30     16.70   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* GMC     LE MANS WGN    226E            F 400 4V A  5000 2.56 31.8 276 *  21.71     15.92   *  25.31     16.71   *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *                    *                    *
* DISTRIBUTOR  1112928-9343 AND CARBURETOR  17056264-32                 *  25.24     16.07   *  30.76     16.67   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* GMC     GRAND PRIX     221E            F 400 4V A  4500 2.41 30.6 271 *  20.93     16.36   *  25.24     16.71   *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *                    *                    *
* DISTRIBUTOR  1112495-9349 AND CARBURETOR  17056263-3                  *  27.13     16.24   *  35.06     17.24   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* GMC     FORMULA        223F            F 400 4V M4 4000 3.08 40.0 263 *  27.14     16.54   *  36.52     17.33   *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *                    *                    *
* DISTRIBUTOR  1103205C068  AND CARBURETOR  17056564-2                  *  20.84     15.84   *  25.98     16.55   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* GMC     GRAND LEMANS   283C            C 400 4V A  5000 2.56 31.8 610 *  17.66     15.77   *  21.70     16.56   *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *                    *                    *
* DISTRIBUTOR  1103205C066  AND CARBURETOR  17056564-13                 *  20.39     15.80   *  25.26     16.47   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* GMC     GRAND PRIX     281C            C 400 4V A  4500 2.41 30.6 608 *  15.91     15.79   *  20.72     16.50   *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *                    *                    *
* DISTRIBUTOR  1103205      AND CARBURETOR  17056564-11                 *  20.83     15.86   *  26.16     16.59   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* GMC     FORMULA        285C            C 400 4V A  4000 2.41 31.5 605 *  17.83     15.93   *  22.39     16.64   *
********************************************************************************************************
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Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID (Continued)

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**************************************************************************************************************
* PROGRAM VSIMII *   400CID, AUTOMATIC, 5000LB, 38.8N/V           * RUN ON  10/30/76  AT  11.13.53   PAGE  6 *
**************************************************************************************************************
*                        *                                        *        FTP-URBAN      *    FTP-HIGHWAY      *
*                        *                                        ***********************************************
*                        *                                        *    FUEL WEIGHTED      *   FUEL WEIGHTED     *
*                        *                                        ***********************************************
*                        *                                        *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                        *                                        * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
**************************************************************************************************************
*                                                                    *                    *                     *
* REFERENCE VALUE                                                    *                    *                     *
* DISTRIBUTOR  1112500C023  AND CARBURETOR  17056160-23              *   25.35    16.20   *   32.74     16.66   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                    *                     *
* GMC     GRANDVILLE     211E1          F 400 2V A  5000 2.41 29.9 274 *  20.43    16.11   *   25.88     16.68   *
*                                                                    *                    *                     *
* REFERENCE VALUE                                                    *                    *                     *
* DISTRIBUTOR  1112896C8805 AND CARBURETOR  17056200N912             *     .82    13.99   *    3.07     14.51   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                    *                     *
* GMC     IMPALA SDN     541E           F 454 4V A  5000 2.73 33.9 236 *    .79    13.67   *    2.94     14.63   *
*                                                                    *                    *                     *
* REFERENCE VALUE                                                    *                    *                     *
* DISTRIBUTOR  1112886-8794 AND CARBURETOR  17056200N925             *   17.84    13.85   *   20.43     14.40   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                    *                     *
* GMC     CAPRICE        544E           F 454 4V A  5500 2.73 32.5 238 *  16.42    13.47   *   18.55     14.50   *
*                                                                    *                    *                     *
* REFERENCE VALUE                                                    *                    *                     *
* DISTRIBUTOR  1112963-43   AND CARBURETOR  17056540-5               *   20.95    16.54   *   25.41     17.23   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                    *                     *
* GMC     RIVIERA        471C           C 455 4V A  5000 2.93 35.9 545 *  21.17    16.19   *   25.71     17.38   *
*                                                                    *                    *                     *
* REFERENCE VALUE                                                    *                    *                     *
* DISTRIBUTOR  11129850-4   AND CARBURETOR  17056240-13              *   25.41    16.61   *   30.23     17.40   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                    *                     *
* GMC     ELECTRA        461E           F 455 4V A  5500 2.56 31.3 155 *  22.71    16.13   *   26.57     17.53   *
*                                                                    *                    *                     *
* REFERENCE VALUE                                                    *                    *                     *
* DISTRIBUTOR  11129850-2   AND CARBURETOR  17056240-12              *   26.05    16.49   *   30.77     17.26   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                    *                     *
* GMC     LESABRE        463E           F 455 4V A  5000 2.55 31.3 155 *  23.50    16.09   *   27.52     17.41   *
*                                                                    *                    *                     *
* REFERENCE VALUE                                                    *                    *                     *
* DISTRIBUTOR  11129850-5   AND CARBURETOR  17056240-24              *   25.31    16.58   *   30.51     17.54   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                    *                     *
* GMC     ESTATE WGN     464E           F 455 4V A  5500 2.93 35.1 157 *  24.86    15.14   *   29.74     17.67   *
*                                                                    *                    *                     *
* REFERENCE VALUE                                                    *                    *                     *
* DISTRIBUTOR  1112963-41   AND CARBURETOR  17056540-8               *   20.52    16.61   *   24.93     17.19   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                    *                     *
* GMC     ESTATE WGN     474C           C 455 4V A  5500 2.93 35.1 547 *  20.15    15.17   *   24.20     17.32   *
**************************************************************************************************************
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Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID (Continued)

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*************************************************************************************************************
* PROGRAM VSIMII *   400CID, AUTOMATIC, 5000LB, 38.8N/V          *  RUN ON  10/30/76  AT  11.13.53   PAGE  7 *
*************************************************************************************************************
*                          *                                     *      FTP-URBAN       *    FTP-HIGHWAY     *
*                          *                                     ***********************************************
*                          *                                     *    FUEL WEIGHTED     *   FUEL WEIGHTED    *
*                          *                                     ***********************************************
*                          *                                     *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                          *                                     * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
*************************************************************************************************************
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *                     *                     *
* DISTRIBUTOR  1112963-42   AND CARBURETOR  17056540-7              *   21.55     16.54   *   25.59     17.33   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    LESABRE        473C          C 455 4V A  5000 2.73 33.4 544 *   20.52     16.16   *   24.25     17.47   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *                     *                     *
* DISTRIBUTOR  1112937      AND CARBURETOR  17056256-3              *   18.59     16.80   *   22.76     17.18   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    CUTLASS WGN    334E          F 455 4V A  5000 2.56 31.8 255 *   16.99     16.40   *   20.64     17.33   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *                     *                     *
* DISTRIBUTOR  1112937-1    AND CARBURETOR  17056256-2              *   18.49     16.90   *   22.78     17.31   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    CUTLASS SPRME 333E           F 455 4V A  4500 3.08 39.2 252 *   20.31     16.66   *   25.39     17.46   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *                     *                     *
* DISTRIBUTOR  1112930-9528 AND CARBURETOR  17056262-29             *   23.43     16.63   *   29.35     16.74   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    LEMANS CPE     224E          F 455 4V A  4500 2.41 29.9 272 *   20.59     15.71   *   25.62     16.91   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *                     *                     *
* DISTRIBUTOR  1112930-9526 AND CARBURETOR  17056262-25             *   23.76     16.01   *   29.93     16.74   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    BONNEVILLE     222E          F 455 4V A  5000 2.41 29.9 278 *   20.65     15.60   *   25.69     16.89   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *                     *                     *
* DISTRIBUTOR  1112930-9529 AND CARBURETOR  17056262-23             *   23.55     16.06   *   29.42     16.88   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    GRAND SAFARI  225E           F 455 4V A  5500 2.56 30.7 280 *   20.72     15.59   *   25.42     17.01   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *                     *                     *
* DISTRIBUTOR  1112960-9519 AND CARBURETOR  17056562-19             *   19.48     16.29   *   26.52     17.13   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    GRAND SAFARI  274C           C 455 4V A  5500 2.73 32.5 612 *   17.95     15.81   *   24.12     17.26   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *                     *                     *
* DISTRIBUTOR  1112960-9520 AND CARBURETOR  17056566-11             *   20.07     16.87   *   27.05     17.82   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    BONNEVILLE BR 271C1          C 455 4V A  5000 2.56 31.8 611 *   18.35     16.46   *   24.53     17.97   *
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Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID (Continued)

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**************************************************************************************************************
* PROGRAM VSIMII *   400CID, AUTOMATIC, 5000LB, 38.8N/V                   *  RUN ON  10/30/76  AT  11.13.53   PAGE  8 *
**************************************************************************************************************
*                              *                                          *       FTP-URBAN       *      FTP-HIGHWAY      *
*                              *                                          *************************************************
*                              *                                          *     FUEL WEIGHTED     *     FUEL WEIGHTED     *
*                              *                                          *************************************************
*                              *                                          *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL  *
*                              *                                          * (DEGREE)  *  RATIO    * (DEGREE)  *  RATIO    *
**************************************************************************************************************
*                                                                         *                       *                       *
* REFERENCE VALUE                                                         *                       *                       *
* DISTRIBUTOR  1112963C201  AND CARBURETOR  17056566-17                  *   20.84       16.85   *   27.22       17.78   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                       *                       *
* GMC    LEMANS CPE     273C1            C 455 4V A  4500 2.41 31.3 609   *   18.99       16.52   *   24.75       17.96   *
*                                                                         *                       *                       *
* REFERENCE VALUE                                                         *                       *                       *
* DISTRIBUTOR  1112494C023  AND CARBURETOR  17056221N835                  *   13.16       14.67   *   18.36       15.38   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                       *                       *
* GMC    FLEETSIDE P/U 891F              F 454 4V A  5000 3.07 38.6 847   *   14.12       14.39   *   19.81       15.49   *
*                                                                         *                       *                       *
* REFERENCE VALUE                                                         *                       *                       *
* DISTRIBUTOR  1112494C021  AND CARBURETOR  17056221N017                  *   13.40       14.74   *   18.78       15.42   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                       *                       *
* GMC    STEPSIDE P/U  894F1             F 454 4V A  4500 3.73 46.9 844   *   17.10       14.61   *   24.66       15.54   *
*                                                                         *                       *                       *
* REFERENCE VALUE                                                         *                       *                       *
* DISTRIBUTOR  1112494C024  AND CARBURETOR  17056221N833                  *   13.52       14.92   *   18.73       15.58   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                       *                       *
* GMC    FLEETSIDE P/U 893F1             F 454 4V A  5000 3.07 34.9 848   *   13.33       14.60   *   18.45       15.71   *
*                                                                         *                       *                       *
* REFERENCE VALUE                                                         *                       *                       *
* DISTRIBUTOR  1112897-9115 AND CARBURETOR  17056530-4                    *   25.92       14.17   *   29.59       15.49   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                       *                       *
* GMC    ELDORADO CPE  633C1             C 500 4V A  5500 2.73 32.7 549   *   25.44       13.54   *   28.80       15.71   *
*                                                                         *                       *                       *
* REFERENCE VALUE                                                         *                       *                       *
* DISTRIBUTOR  1112954-9706 AND CARBURETOR  17056530-6                    *   31.31       14.13   *   35.64       15.42   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                       *                       *
* GMC    COUPE DEVILLE 631C              C 500 4V A  5500 2.73 32.7 553   *   30.73       13.51   *   34.70       15.63   *
*                                                                         *                       *                       *
* REFERENCE VALUE                                                         *                       *                       *
* DISTRIBUTOR  1112954-9698 AND CARBURETOR  17056230-1                    *   31.46       15.73   *   36.14       16.62   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                       *                       *
* GMC    COUPE DEVILLE 621F              F 500 4V A  5500 2.73 32.7 163   *   30.88       15.04   *   35.18       16.85   *
*                                                                         *                       *                       *
* REFERENCE VALUE                                                         *                       *                       *
* DISTRIBUTOR  1112954-9707 AND CARBURETOR  17056230-5                    *   31.53       15.76   *   36.01       16.64   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                       *                       *
* GMC    ELDORADO CPE  623F              F 500 4V A  5500 2.73 32.7 162   *   30.95       15.07   *   35.06       16.87   *
**************************************************************************************************************
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Table 5-17. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 400 CID (Concluded)

```
***************************************************************************************************************
* PROGRAM VSIMII *   400CID, AUTOMATIC, 5000LB, 38.8N/V            *  RUN ON  10/30/76  AT  11.13.53   PAGE  9 *
***************************************************************************************************************
*                                *                                 *       FTP-URBAN        *    FTP-HIGHWAY   *
*                                *                                 ********************************************
*                                *                                 *    FUEL WEIGHTED       *   FUEL WEIGHTED  *
*                                *                                 ********************************************
*                                *                                 *  ADVANCE * AIR/FUEL    *  ADVANCE * AIR/FUEL *
*                                *                                 * (DEGREE) *   RATIO     * (DEGREE) *   RATIO  *
***************************************************************************************************************
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  1112943       AND CARBURETOR  7045221                   *  20.22     14.64    *  26.02     15.31    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* SS AUT EXCALIBUR      268              F 454 4V A  4500 2.73 34.7 382 *  20.03     14.40    *  25.92     15.45    *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  3874173       AND CARBURETOR  1                         *  23.59     15.74    *  29.79     16.26    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* JENSEN INTERCEPTOR    2311-1591        C 440 4V A  4500 3.07 40.4 667 *  26.06     15.61    *  33.39     16.37    *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  1112892       AND CARBURETOR  17056528                  *  17.10     15.82    *  23.51     16.37    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* AVANTI AVANTI II      595C                                           *                     *                     *
***************************************************************************************************************
```

Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID

```
**************************************************************************************************************
* PROGRAM VSIMII *   350CID, AUTOMATIC, 5000LB, 38.8N/V            *  RUN ON  10/30/76  AT  11.19.07   PAGE  1 *
**************************************************************************************************************
*                      *                                           *       FTP-URBAN        *    FTP-HIGHWAY     *
*                      *                                           *******************************************
*                      *                                           *    FUEL WEIGHTED       *   FUEL WEIGHTED    *
*                      *                                           *******************************************
*                      *                                           *  ADVANCE * AIR/FUEL    *  ADVANCE * AIR/FUEL *
*                      *                                           * (DEGREE) *  RATIO      * (DEGREE) *  RATIO   *
**************************************************************************************************************
*                                                                      *                    *                    *
* REFERENCE VALUE                                                      *  18.37     14.81   *  22.67     15.65   *
* DISTRIBUTOR   3228265        AND CARBURETOR  SF3227439               *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                    *                    *
* AMC     MATADOR          D51-17R       F 360 4V A  4500 2.87 37.8  22 *  18.45     14.81   *  22.92     15.70   *
* AMC     MATADOR WGN      D58-39R       F 360 4V A  4500 3.54 44.4  24 *  21.16     14.87   *  26.56     15.68   *
*                                                                      *                    *                    *
* REFERENCE VALUE                                                      *  18.37     14.90   *  22.67     15.30   *
* DISTRIBUTOR   3228265        AND CARBURETOR  SF3227441               *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                    *                    *
* AMC     MATADOR          D51-18R       F 360 2V A  4500 2.87 37.8  23 *  18.45     14.93   *  22.92     15.34   *
* AMC     MATADOR          D58-76D(R)    F 360 2V A  4500 3.54 44.4  25 *  21.16     14.97   *  26.56     15.33   *
*                                                                      *                    *                    *
* REFERENCE VALUE                                                      *  25.07     14.81   *  28.31     15.65   *
* DISTRIBUTOR   3228266        AND CARBURETOR  SF3227439               *                    *                    *
* CONFIGURATION-CORRECTFD VALUES FOR THE FOLLOWING VEHICLES            *                    *                    *
* AMC     MATADOR          D51-22R       C 360 4V A  4500 3.15 41.5 461 *  27.23     14.85   *  31.17     15.69   *
* AMC     MATADOR          D58-3CD(R)    C 360 4V A  4500 3.54 44.4 462 *  28.87     14.87   *  33.17     15.68   *
*                                                                      *                    *                    *
* REFERENCE VALUE                                                      *  21.30     14.96   *  24.41     15.35   *
* DISTRIBUTOR   3228266        AND CARBURETOR  SF3227441               *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                    *                    *
* AMC     MATADOR          D51-21R       C 360 2V A  4500 3.15 41.5 460 *  23.15     15.00   *  26.88     15.38   *
* AMC     MATADOR          D58-42R       C 360 2V A  4500 3.54 44.4 463 *  24.53     15.03   *  28.60     15.38   *
*                                                                      *                    *                    *
* REFERENCE VALUE                                                      *  26.42     16.12   *  35.40     16.08   *
* DISTRIBUTOR   3874115-360  AND CARBURETOR  4006646-360               *                    *                    *
* CONFIGURATION-CORRECTED VALUFS FOR THE FOLLOWING VEHICLES            *                    *                    *
* CHRYSL  PLYMOUTH         1035          F 360 2V A  4000 3.21 43.7  62 *  30.31     16.26   *  41.55     16.13   *
* CHRYSL  PLYMOUTH         4071          F 360 2V A  4500 2.71 34.5  64 *  24.58     16.09   *  32.94     16.14   *
* CHRYSL  FURY             4072          F 360 2V A  4500 3.21 42.9  67 *  29.55     16.18   *  40.19     16.12   *
* CHRYSL  CORONET          4073          F 360 2V A  4000 2.45 32.3  59 *  23.50     16.14   *  31.56     16.16   *
*                                                                      *                    *                    *
* REFERENCE VALUE                                                      *  26.77     16.28   *  39.26     17.56   *
* DISTRIBUTOR   3874097-360  AND CARBURETOR  3830529-360               *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                    *                    *
* CHRYSL  VALIANT          2069          F 360 4V A  4000 3.21 43.5  61 *  30.59     16.42   *  45.89     17.61   *
* CHRYSL  PLYMOUTH         2074          F 360 4V A  4000 2.94 39.9  60 *  28.41     16.38   *  42.39     17.62   *
**************************************************************************************************************
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Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID (Continued)

```
*******************************************************************************************************************
* PROGRAM VSIMII *   350CID, AUTOMATIC, 5000LB, 38.8N/V                 *  RUN ON  10/30/76  AT  11.19.07   PAGE  2 *
*******************************************************************************************************************
*                              *                                        *      FTP-URBAN       *     FTP-HIGHWAY      *
*                              *                                        ********************************************
*                              *                                        *    FUEL WEIGHTED     *    FUEL WEIGHTED     *
*                              *                                        ********************************************
*                              *                                        *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL  *
*                              *                                        * (DEGREE) *  RATIO    * (DEGREE) *  RATIO    *
*******************************************************************************************************************
*                                                                            *                  *                     *
* REFERENCE VALUE                                                            *                  *                     *
* DISTRIBUTOR  3874115-360  AND CARBURETOR  4006624-360                      *                  *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *  26.53    15.16  *  35.45     15.70     *
* CHRYSL CHARGER       4158             C 360 4V A  4500 2.71 33.9 487       *  24.32    15.12  *  32.47     15.76     *
* CHRYSL GRAN FURY     4162             C 360 4V A  5000 2.71 32.3 489       *  23.15    15.03  *  30.58     15.74     *
* CHRYSL PLYMOUTH      4163             C 360 4V A  5000 3.21 40.9 490       *  28.20    15.12  *  37.88     15.72     *
* CHRYSL PLYMOUTH      4173             C 360 4V A  4500 3.21 40.7 488       *  28.36    15.19  *  38.34     15.74     *
* CHRYSL DODGE         4174             C 360 4V A  4500 2.45 30.0 486       *  22.01    15.08  *  29.10     15.76     *
*                                                                            *                  *                     *
* REFERENCE VALUE                                                            *                  *                     *
* DISTRIBUTOR  3874115-360  AND CARBURETOR  4036619-360                      *                  *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *  26.56    16.15  *  35.47     16.14     *
* CHRYSL PLYMOUTH      2224             F 360 2V A  5000 2.71 33.9  71       *  24.12    16.03  *  31.95     16.18     *
* CHRYSL PLYMOUTH      2235             F 360 2V A  5000 3.21 39.2  72       *  27.24    16.09  *  36.46     16.17     *
*                                                                            *                  *                     *
* REFERENCE VALUE                                                            *                  *                     *
* DISTRIBUTOR  3874115-360  AND CARBURETOR  3870955-360                      *                  *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *  26.53    16.05  *  35.45     16.01     *
* CHRYSL B2 VAN        E202             F 360 2V A  4500 2.71 35.1 785       *  25.03    16.02  *  33.51     16.06     *
* CHRYSL RAMCHARGER    E204             F 360 2V A  4500 3.55 46.0 787       *  31.50    16.14  *  42.92     16.04     *
* CHRYSL D1 CLUB CAB   E206             F 360 2V A  4500 2.71 31.3 784       *  22.79    15.98  *  30.23     16.07     *
* CHRYSL B2 SPORT WGN  E208             F 360 2V A  4500 3.21 40.1 786       *  28.03    16.08  *  37.83     16.05     *
*                                                                            *                  *                     *
* REFERENCE VALUE                                                            *                  *                     *
* DISTRIBUTOR  D6AE12127CA  AND CARBURETOR  D6WE-9510-BA                     *                  *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *  33.90    16.39  *  39.10     16.07     *
* FORD   FORD          6A1-351M-4-4R  F 351 2V A  5000 2.75 33.0 128         *  29.67    16.30  *  33.83     16.68     *
* FORD   RANCHERO      601-351M-4-14R F 351 2V A  4500 2.75 42.0 122         *  36.69    16.48  *  42.84     16.68     *
*                                                                            *                  *                     *
* REFERENCE VALUE                                                            *                  *                     *
* DISTRIBUTOR  D5OE12127FA  AND CARBURETOR  D6WE-9510-AA                     *                  *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *  27.14    15.13  *  32.26     15.34     *
* FORD   TORINO ELITE  6C1-351M-4-24R C 351 2V A  5000 2.75 33.6 525         *  24.11    15.07  *  28.37     15.35     *
*                                                                            *                  *                     *
* REFERENCE VALUE                                                            *                  *                     *
* DISTRIBUTOR  D6AE12127BA  AND CARBURETOR  D6WE-9510-AA                     *                  *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *  22.05    15.13  *  27.05     15.34     *
* FORD   RANCHERO      601-351M-4-5R  C 351 2V A  4500 3.25 41.3 522         *  23.53    15.22  *  29.18     15.36     *
*******************************************************************************************************************
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Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID (Continued)

```
***********************************************************************************************************************
* PROGRAM VSIMII *   350CID, AUTOMATIC, 5000LB, 38.8N/V            *  RUN ON  10/30/76  AT  11.19.07    PAGE  3 *
***********************************************************************************************************************
*                                    *                             *         FTP-URBAN        *      FTP-HIGHWAY      *
*                                    *                             ****************************************************
*                                    *                             *      FUEL WEIGHTED       *     FUEL WEIGHTED     *
*                                    *                             ****************************************************
*                                    *                             *  ADVANCE  *  AIR/FUEL    *  ADVANCE *  AIR/FUEL  *
*                                    *                             * (DEGREE)  *   RATIO      * (DEGREE) *   RATIO    *
***********************************************************************************************************************
*                                                                          *                          *                          *
* REFERENCE VALUE                                                          *                          *                          *
* DISTRIBUTOR  D5OE12127FA  AND CARBURETOR  D5WE-9510-GA                   *    27.57      15.54      *    32.54       16.13     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                          *                          *
* FORD                    5O1-351M-4-153                                   *                          *                          *
* FORD                    5A1-351M-4-160                                   *                          *                          *
*                                                                          *                          *                          *
* REFERENCE VALUE                                                          *                          *                          *
* DISTRIBUTOR  D5TE12127ABA AND CARBURETOR  D5UE-9510-LA                   *      .47      14.08      *     2.82       14.21     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                          *                          *
* FORD   ECONOLINE      5E2-351W4-85C  C 351 2V M3 4500 3.00 36.6 905      *      .44      14.24      *     2.57       14.28     *
* FORD   NANTUCKET      5E2-351W4-82C  C 351 2V M3 4500 3.50 43.8 906      *      .51      14.31      *     3.15       14.27     *
*                                                                          *                          *                          *
* REFERENCE VALUE                                                          *                          *                          *
* DISTRIBUTOR  D5TE12127ABA AND CARBURETOR  D5UE-9510-MA                   *      .47      13.66      *     2.82       13.76     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                          *                          *
* FORD   ECONOLINE      5E1-351W4-70C  C 351 2V A  4500 3.00 37.5 904      *      .47      13.71      *     2.78       13.78     *
* FORD   NANTUCKET      5E1-351W4-74C  C 351 2V A  4500 3.50 43.8 907      *      .53      13.77      *     3.21       13.77     *
*                                                                          *                          *                          *
* REFERENCE VALUE                                                          *                          *                          *
* DISTRIBUTOR  D5UE12127DA  AND CARBURETOR  D5UE-9510-CA                   *     1.04      14.94      *     4.27       15.54     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                          *                          *
* FORD   NANTUCKET      5E1-351W4-68F  F 351 2V A  4500 3.00 37.6 807      *     1.03      14.99      *     4.23       15.56     *
* FORD   NANTUCKET      5E1-351W4-81F  F 351 2V A  4500 3.50 43.8 811      *     1.17      15.06      *     4.87       15.55     *
*                                                                          *                          *                          *
* REFERENCE VALUE                                                          *                          *                          *
* DISTRIBUTOR  D5UE12127BA  AND CARBURETOR  D5UE-9510-AA                   *      .46      15.31      *     2.75       15.47     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                          *                          *
* FORD   NANTUCKET      5E2-351W4-76F  F 351 2V M3 4500 3.00 36.6 808      *      .42      15.48      *     2.50       15.54     *
* FORD   NANTUCKET      5E2-351W4-78F  F 351 2V M3 4500 3.50 43.8 812      *      .49      15.55      *     3.07       15.52     *
*                                                                          *                          *                          *
* REFERENCE VALUE                                                          *                          *                          *
* DISTRIBUTOR  D5TE12127BA  AND CARBURETOR  D5TE9510BFB                    *    20.72      13.55      *    28.53       14.12     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                          *                          *
* FORD                    6E2-360-4-2F                                     *                          *                          *
*                                                                          *                          *                          *
* REFERENCE VALUE                                                          *                          *                          *
* DISTRIBUTOR  D5TE12127AA  AND CARBURETOR  D5TE9510AUB                    *    19.45      13.43      *    26.47       14.02     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                          *                          *
* FORD   F-100          6E1-360-4-1C   C 360 2V A  4500 3.00 38.0 908      *    19.62      13.43      *    26.89       14.06     *
* FORD   F-100          6E1-360-4-4C   C 360 2V A  5000 3.50 43.0 916      *    21.59      13.41      *    29.61       14.04     *
***************************************************************************************************************************************
```

Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID (Continued)

```
*****************************************************************************************************
* PROGRAM VSIMII *    350CID, AUTOMATIC, 5000LB, 38.8N/V           *  RUN ON  10/30/76  AT  11.19.07   PAGE  4 *
*****************************************************************************************************
*                          *                                       *      FTP-URBAN       *     FTP-HIGHWAY      *
*                          *                                       ***********************************************
*                          *                                       *   FUEL WEIGHTED      *   FUEL WEIGHTED      *
*                          *                                       ***********************************************
*                          *                                       *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL  *
*                          *                                       * (DEGREE) *  RATIO    * (DEGREE) *  RATIO    *
*****************************************************************************************************
*                                                                        *                       *                      *
* REFERENCE VALUE                                                        *                       *                      *
* DISTRIBUTOR  D5TE12127PA  AND CARBURETOR  D5TE9510BC8                  *   20.70    13.34      *   28.53     13.66    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                       *                      *
* FORD   F-100          6F2-360-4-3C   C 360 2V M3 4500 3.00 35.0 909    *   18.64    13.42      *   26.36     13.74    *
*                                                                        *                       *                      *
* REFERENCE VALUE                                                        *                       *                      *
* DISTRIBUTOR  D5TE12127AFA AND CARBURETOR  D5TE-9510-ZB                 *   23.80    14.67      *   32.55     15.03    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                       *                      *
* FORD                  5F1-360-4-106F F 360 2V A  4500 3.00 37.6 815    *   23.79    14.67      *   32.75     15.07    *
*                                                                        *                       *                      *
* REFERENCE VALUE                                                        *                       *                      *
* DISTRIBUTOR  D5TE12127PA  AND CARBURETOR  D5TE9510BGA                  *   21.68    14.75      *   29.04     15.48    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                       *                      *
* FORD                  5F1-360-4-60F                                    *                       *                      *
*                                                                        *                       *                      *
* REFERENCE VALUE                                                        *                       *                      *
* DISTRIBUTOR  1112880 8541 AND CARBURETOR  17056114N104                 *   19.40    14.65      *   27.51     15.33    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                       *                      *
* GMC    CAPRICE        573F           F 350 2V A  5000 3.08 38.8 233    *   19.41    14.65      *   27.52     15.33    *
*                                                                        *                       *                      *
* REFERENCE VALUE                                                        *                       *                      *
* DISTRIBUTOR  1112880 8532 AND CARBURETOR  17056114N334                 *   18.92    14.68      *   27.08     15.37    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                       *                      *
* GMC    MALIBU         575F           F 350 2V A  4500 2.56 31.7 224    *   16.15    14.58      *   22.94     15.40    *
*                                                                        *                       *                      *
* REFERENCE VALUE                                                        *                       *                      *
* DISTRIBUTOR  1112880 8535 AND CARBURETOR  17056114N098                 *   19.59    14.73      *   27.85     15.27    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                       *                      *
* GMC    MONTE CARLO    571F           F 350 2V A  4500 2.73 34.7 226    *   18.01    14.76      *   25.60     15.30    *
*                                                                        *                       *                      *
* REFERENCE VALUE                                                        *                       *                      *
* DISTRIBUTOR  1112880 8537 AND CARBURETOR  17056114N113                 *   20.13    14.98      *   27.96     15.68    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                       *                      *
* GMC    IMPALA         574F           F 350 2V A  5000 2.73 33.4 229    *   17.77    14.92      *   24.42     15.69    *
*                                                                        *                       *                      *
* REFERENCE VALUE                                                        *                       *                      *
* DISTRIBUTOR  1112880 8544 AND CARBURETOR  17056202N670                 *   22.17    15.80      *   31.31     16.45    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                       *                      *
* GMC    CAPRICE        132F           F 350 4V A  5000 2.73 33.9 232    *   19.81    15.75      *   27.71     16.46    *
*****************************************************************************************************
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Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID (Continued)

```
*****************************************************************************************************************
* PROGRAM VSIMII *   350CID, AUTOMATIC, 5000LB, 38.8N/V             *  RUN ON  10/30/76  AT  11.19.07   PAGE  5 *
*****************************************************************************************************************
*                                *                                  *      FTP-URBAN       *     FTP-HIGHWAY      *
*                                *                                  ***********************************************
*                                *                                  *    FUEL WEIGHTED     *    FUEL WEIGHTED     *
*                                *                                  ***********************************************
*                                *                                  *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL  *
*                                *                                  * (DEGREE) *   RATIO   * (DEGREE) *   RATIO   *
*****************************************************************************************************************
*                                                                        *                      *                      *
* REFERENCE VALUE                                                        *                      *                      *
* DISTRIBUTOR  1112888-8577 AND CARBURETOR  17056202N650                 *  22.14     15.84     *  31.17     16.37     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                      *
* GMC    CAMARO L/T     136F              F 350 4V A  4000 3.08 41.4 214 *  23.86     16.03     *  34.20     16.41     *
*                                                                        *                      *                      *
* REFERENCE VALUE                                                        *                      *                      *
* DISTRIBUTOR  111290508530 AND CARBURETOR  17056502N785                 *  16.87     15.83     *  24.87     16.43     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                      *
* GMC    CAMARO L/T     593C              C 350 4V A  4000 3.08 41.4 583 *  19.13     16.31     *  27.28     16.46     *
*                                                                        *                      *                      *
* REFERENCE VALUE                                                        *                      *                      *
* DISTRIBUTOR  110320408536 AND CARBURETOR  17056502N655                 *  16.73     15.80     *  25.25     16.38     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                      *
* GMC    MALIBU         591C              C 350 4V A  4500 2.73 34.7 585 *  15.41     15.83     *  23.20     16.41     *
*                                                                        *                      *                      *
* REFERENCE VALUE                                                        *                      *                      *
* DISTRIBUTOR  110320408539 AND CARBURETOR  17056502N783                 *  16.46     15.79     *  24.85     16.37     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                      *
* GMC    CAPRICE        592C              C 350 4V A  5000 3.08 38.8 587 *  16.46     15.79     *  24.36     16.37     *
*                                                                        *                      *                      *
* REFERENCE VALUE                                                        *                      *                      *
* DISTRIBUTOR  1103200-9252 AND CARBURETOR  17056226N138                 *  14.09     15.33     *  23.53     16.32     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                      *
* GMC    CORVETTE       561F              F 350 4V A  4000 3.36 42.7 216 *  15.59     15.52     *  26.56     16.35     *
*                                                                        *                      *                      *
* REFERENCE VALUE                                                        *                      *                      *
* DISTRIBUTOR  1103200-9248 AND CARBURETOR  17056211N247                 *  14.55     15.30     *  24.02     16.23     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                      *
* GMC    CORVETTE       564F              F 350 4V M4 4000 3.70 47.1 219 *  16.75     15.66     *  29.09     16.30     *
*                                                                        *                      *                      *
* REFERENCE VALUE                                                        *                      *                      *
* DISTRIBUTOR  1103200.9247 AND CARBURETOR  17056211N249                 *  14.54     15.34     *  24.36     16.22     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                      *
* GMC    CORVETTE       563F              F 350 4V M4 4000 3.55 45.1 218 *  16.13     15.68     *  28.34     16.29     *
*                                                                        *                      *                      *
* REFERENCE VALUE                                                        *                      *                      *
* DISTRIBUTOR  11129910-7   AND CARBURETOR  17056544-1                   *  16.81     16.36     *  21.23     17.00     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                      *
* GMC    LE SABRE       454C              C 350 4V A  5000 3.08 38.2 543 *  15.59     16.35     *  20.94     17.00     *
*****************************************************************************************************************
```

Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID (Continued)

```
*****************************************************************************************************************
* PROGRAM VSIMII *    35CCID, AUTOMATIC, 5000LB, 38.8N/V          *  RUN ON  10/30/76  AT  11.19.07   PAGE  6 *
********************************************************************************************************************
*                              *                                  *        FTP-URBAN        *      FTP-HIGHWAY      *
*                              *                                  ***************************************************
*                              *                                  *     FUEL WEIGHTED       *     FUEL WEIGHTED     *
*                              *                                  ***************************************************
*                              *                                  *  ADVANCE  *  AIR/FUEL   *  ADVANCE *  AIR/FUEL *
*                              *                                  * (DEGREE)  *   RATIO     * (DEGREE) *   RATIO   *
******************************************************************************************************************
*                                                                     *                       *                      *
* REFERENCE VALUE                                                     *  17.30     16.49      *  21.3C     17.43     *
* DISTRIBUTOR  11129910-5  AND CARBURETOR  17056544-3                 *                       *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                       *                      *
* GMC    CENTURY          451C          C 350 4V A  4500 2.73 34.7 542 *  15.96     16.52      *  19.76     17.46     *
*                                                                     *                       *                      *
* REFERENCE VALUE                                                     *  17.39     16.88      *  21.7C     17.81     *
* DISTRIBUTOR  11129910-9  AND CARBURETOR  17056546-2                 *                       *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                       *                      *
* GMC    SKYLARK          453C-1        C 350 4V A  4000 2.55 34.5 541 *  16.11     16.99      *  20.22     17.86     *
*                                                                     *                       *                      *
* REFERENCE VALUE                                                     *  17.77     16.52      *  22.08     17.49     *
* DISTRIBUTOR  11129910-4  AND CARBURETOR  17056244-30                *                       *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                       *                      *
* GMC    CENTURY          444E          F 350 4V A  4500 2.56 32.6 152 *  15.52     16.53      *  19.18     17.53     *
*                                                                     *                       *                      *
* REFERENCE VALUE                                                     *  18.0[illegible]     16.53      *  22.42     17.72     *
* DISTRIBUTOR  11129910-2  AND CARBURETOR  17056246-2                 *                       *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                       *                      *
* GMC    SKYLARK          443E          F 350 4V A  4000 2.56 34.6 149 *  16.68     15.64      *  20.89     17.77     *
*                                                                     *                       *                      *
* REFERENCE VALUE                                                     *  17.20     16.54      *  20.88     17.44     *
* DISTRIBUTOR  11129910-6  AND CARBURETOR  17056244-31                *                       *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                       *                      *
* GMC    LE SABRE         441E          F 350 4V A  5000 3.08 38.2 153 *  16.99     16.53      *  20.59     17.44     *
*                                                                     *                       *                      *
* REFERENCE VALUE                                                     *  17.29     15.69      *  21.45     16.39     *
* DISTRIBUTOR  1112991-945C AND CARBURETOR  17056143-2                *                       *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                       *                      *
* GMC    SKYLARK          423E          F 35C 2V A  4000 2.56 34.6 148 *  16.02     15.8[illegible]      *  19.99     16.44     *
*                                                                     *                       *                      *
* REFERENCE VALUE                                                     *  17.8[illegible]     15.67      *  21.96     16.37     *
* DISTRIBUTOR  1112991-9652 AND CARBURETOR  17056140-3                *                       *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                       *                      *
* GMC    CENTURY          421F          F 350 2V A  450C 2.56 32.6 151 *  15.5[illegible]     15.58      *  19.08     16.40     *
*                                                                     *                       *                      *
* REFERENCE VALUE                                                     *  23.31     16.31      *  29.23     16.61     *
* DISTRIBUTOR  1112497-9517 AND CARBURETOR  17056101-34               *                       *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                       *                      *
* GMC    FORMULA          213E          F 35C 2V A  4000 2.41 31.3 260 *  19.86     16.39      *  24.89     16.67     *
******************************************************************************************************************
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Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID (Continued)

```
***************************************************************************************************************
* PROGRAM VSIMII *   350CID, AUTOMATIC, 5000LB, 38.8N/V                  *  RUN ON  10/30/76  AT  11.19.37   PAGE  7 *
***************************************************************************************************************
*                                   *                                     *        FTP-URBAN       *      FTP-HIGHWAY       *
*                                   *                                     *****************************************************
*                                   *                                     *     FUEL WEIGHTED      *     FUEL WEIGHTED      *
*                                   *                                     *****************************************************
*                                   *                                     *  ADVANCE  * AIR/FUEL * ADVANCE  * AIR/FUEL *
*                                   *                                     * (DEGREE)  *  RATIO   * (DEGREE) *  RATIO   *
***************************************************************************************************************
*                                                                             *                      *                      *
* REFERENCE VALUE                                                             *                      *                      *
* DISTRIBUTOR  1112950-9524 AND CARBURETOR  17056162-13                       *  19.69     16.18     *  26.14     16.52     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                   *                      *                      *
* GMC    GRAND LEMANS  212F1          F 350 2V A  4500 2.41 30.6 266          *  16.33     16.17     *  21.46     16.56     *
*                                                                             *                      *                      *
* REFERENCE VALUE                                                             *                      *                      *
* DISTRIBUTOR  1103200CC54  AND CARBURETOR  17056568-6                        *  19.62     15.96     *  25.82     16.72     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                   *                      *                      *
* GMC    GRAND LEMANS  282C           C 350 4V A  4500 2.56 32.6 606          *  17.14     15.97     *  22.43     16.76     *
*                                                                             *                      *                      *
* REFERENCE VALUE                                                             *                      *                      *
* DISTRIBUTOR  1103223       AND CARBURETOR  17056266                         *  28.31     16.21     *  33.12     16.85     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                   *                      *                      *
* GMC    GRAND PRIX    261E           F 350 4V A  4500 2.41 30.6 264          *  23.44     16.20     *  27.19     16.89     *
*                                                                             *                      *                      *
* REFERENCE VALUE                                                             *                      *                      *
* DISTRIBUTOR  1103223       AND CARBURETOR  17056266(1)                      *  28.1      16.34     *  33.33     16.95     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                   *                      *                      *
* GMC    GRAND PRIX    263E           F 350 4V A  4500 2.41 29.9 269          *  22.87     16.32     *  26.80     16.99     *
*                                                                             *                      *                      *
* REFERENCE VALUE                                                             *                      *                      *
* DISTRIBUTOR  1103223       AND CARBURETOR  17056265(1)                      *  29.23     16.11     *  34.08     16.81     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                   *                      *                      *
* GMC    GRAND PRIX    264F           F 350 4V A  4500 2.41 31.3 267          *  24.69     16.11     *  28.54     16.84     *
*                                                                             *                      *                      *
* REFERENCE VALUE                                                             *                      *                      *
* DISTRIBUTOR  1112880       AND CARBURETOR  17056116N405                     *  18.71     14.77     *  29.55     15.37     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                   *                      *                      *
* GMC    FLEETSIDE P/U 881F           F 350 2V A  4500 3.40 42.8 837          *  23.55     14.88     *  28.43     15.38     *
*                                                                             *                      *                      *
* REFERENCE VALUE                                                             *                      *                      *
* DISTRIBUTOR  1112888       AND CARBURETOR  17056219N673                     *  21.97     15.80     *  30.98     16.40     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                   *                      *                      *
* GMC    CHEVY VAN     903F           F 350 4V M3 4000 3.42 44.5 831          *  24.08     16.14     *  35.60     16.47     *
*                                                                             *                      *                      *
* REFERENCE VALUE                                                             *                      *                      *
* DISTRIBUTOR  1112888-8566 AND CARBURETOR  17056208N057                      *  21.57     15.84     *  30.22     16.46     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                   *                      *                      *
* GMC    FLEETSIDE P/U 9C161          F 350 4V A  4500 3.07 38.6 834          *  21.67     15.91     *  30.59     16.48     *
***************************************************************************************************************
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Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID (Continued)

```
****************************************************************************************************************************
* PROGRAM VSIMTI *   350CID, AUTOMATIC, 5000LB, 38.8N/V                      *  RUN ON  10/30/76  AT  11.19.07   PAGE  8 *
****************************************************************************************************************************
*                                    *                                       *      FTP-URBAN        *     FTP-HIGHWAY       *
*                                    *                                       *************************************************
*                                    *                                       *    FUEL WEIGHTED      *    FUEL WEIGHTED      *
*                                    *                                       *************************************************
*                                    *                                       *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL  *
*                                    *                                       * (DEGREE)  *  RATIO    * (DEGREE)  *  RATIO    *
****************************************************************************************************************************
*                                                                               *                       *                      *
* REFERENCE VALUE                                                               *                       *                      *
* DISTRIBUTOR  1112888-8589 AND CARBURETOR  17056208N675                        *   22.97      15.81    *   31.75     16.39    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                     *                       *                      *
* GMC     FLEETSIDE P/U 904F            F 350 4V A  4500 3.07 34.9 835          *   21.23      15.85    *   29.33     16.42    *
*                                                                               *                       *                      *
* REFERENCE VALUE                                                               *                       *                      *
* DISTRIBUTOR  1112905-8314 AND CARBURETOR  17056518N683                        *   16.41      15.78    *   24.66     16.36    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                     *                       *                      *
* GMC     BEAUVILLE VAN 865C            C 350 4V A  4500 3.42 44.5 923          *   18.64      15.91    *   28.44     16.37    *
*                                                                               *                       *                      *
* REFERENCE VALUE                                                               *                       *                      *
* DISTRIBUTOR  1112905-8379 AND CARBURETOR  17056508N671                        *   16.65      15.92    *   25.37     16.51    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                     *                       *                      *
* GMC     FLEETSIDE P/U 864C            C 350 4V A  4500 3.07 34.9 921          *   15.39      15.96    *   23.16     16.53    *
*                                                                               *                       *                      *
* REFERENCE VALUE                                                               *                       *                      *
* DISTRIBUTOR  1112905-8541 AND CARBURETOR  17056518N734                        *   15.61      15.88    *   23.62     16.45    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                     *                       *                      *
* GMC     SPORT VAN     963C            C 350 4V A  5000 3.07 38.5 925          *   15.55      15.88    *   23.52     16.45    *
*                                                                               *                       *                      *
* REFERENCE VALUE                                                               *                       *                      *
* DISTRIBUTOR  1112905-8327 AND CARBURETOR  17056508N649                        *   16.58      15.89    *   24.79     16.39    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                     *                       *                      *
* GMC     FLEETSIDE P/U 861C            C 350 4V A  4500 3.07 38.6 922          *   16.67      15.95    *   25.10     16.41    *
*                                                                               *                       *                      *
* REFERENCE VALUE                                                               *                       *                      *
* DISTRIBUTOR  1112880-8324 AND CARBURETOR  17056124N333                        *   19.03      14.75    *   27.53     15.39    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                     *                       *                      *
* GMC     CHEVY VAN     855E            F 350 2V A  4500 3.07 38.6 836          *   19.14      14.82    *   27.87     15.41    *
*                                                                               *                       *                      *
* REFERENCE VALUE                                                               *                       *                      *
* DISTRIBUTOR  1112880-8324 AND CARBURETOR  17056123N320                        *   19.55      14.88    *   27.73     15.52    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                     *                       *                      *
* GMC     CHEVY VAN     854F            F 350 2V M3 4500 3.42 44.5 839          *   21.34      15.13    *   31.35     15.57    *
*                                                                               *                       *                      *
* REFERENCE VALUE                                                               *                       *                      *
* DISTRIBUTOR  1112880-8271 AND CARBURETOR  17056116N342                        *   20.05      14.82    *   27.93     15.42    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                     *                       *                      *
* GMC     FLEETSIDE P/U 853F            F 350 2V A  4500 3.73 46.9 940          *   23.83      14.97    *   33.82     15.42    *
****************************************************************************************************************************
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Table 5-18. Fuel-Weighted Calibration Factors
Reference Vehicle 5000/A/3.08, 350 CID (Concluded)

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*****************************************************************************************************
* PROGRAM VSIMII *    350CID, AUTOMATIC, 5000LB, 38.8N/V           *  RUN ON  10/30/76  AT  11.19.07   PAGE  9 *
*****************************************************************************************************
*                               *                                  *      FTP-URBAN      *      FTP-HIGHWAY      *
*                               *                                  ***************************************************
*                               *                                  *    FUEL WEIGHTED    *    FUEL WEIGHTED      *
*                               *                                  ***************************************************
*                               *                                  *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL  *
*                               *                                  * (DEGREE) *  RATIO   * (DEGREE) *  RATIO    *
*****************************************************************************************************
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  1112888-8585 AND CARBURETOR  17056208N679               *   22.72     15.73   *   31.60     16.27   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* GMC     SPORT VAN     906E             F 350 4V A  5000 3.07 38.6 845 *   22.63     15.73   *   31.46     16.27   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  1112888-8567 AND CARBURETOR  17056209N786               *   20.88     16.35   *   30.17     17.02   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* GMC     FLEETSIDE P/U 905E             F 350 4V M4 4500 3.40 42.8 838 *   21.91     16.60   *   32.90     17.09   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  1112860        AND CARBURETOR  17056114                 *   19.88     14.54   *   27.69     15.32   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* CHECKE CHECKER          12             F 350 2V A  4500 3.31 40.8 297 *   20.95     14.63   *   29.49     15.34   *
*****************************************************************************************************
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Table 5-19. Fuel-Weighted Calibration Factors Reference Vehicle 4500/A/3.21, 318 CID

```
*******************************************************************************************************************
* PROGRAM VSIMII *   318CID, AUTOMATIC, 4500LB, 40.9N/V               *  RUN ON  10/30/76  AT  11.21.06    PAGE  1 *
*******************************************************************************************************************
*                              *                                      *        FTP-URBAN       *     FTP-HIGHWAY      *
*                              *                                      ********************************************
*                              *                                      *     FUEL WEIGHTED      *    FUEL WEIGHTED     *
*                              *                                      ********************************************
*                              *                                      *  ADVANCE  * AIR/FUEL  *  ADVANCE * AIR/FUEL *
*                              *                                      * (DEGREE)  *  RATIO    * (DEGREE) *  RATIO   *
*******************************************************************************************************************
*                                                                           *                       *                     *
* REFERENCE VALUE                                                           *                       *                     *
* DISTRIBUTOR  3228263        AND CARBURETOR  SF3227442                     *   19.07      14.32    *   25.29      15.20    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                       *                     *
* AMC     HORNET SW      D50-3201         F 304 2V A  4000 2.87 38.4   20   *   17.82      14.46    *   23.65      15.19    *
* AMC     HORNET         D50-350          F 304 2V A  3500 3.15 43.5   14   *   20.01      14.59    *   26.99      15.20    *
* AMC     MATADOR SW     D58-360          F 304 2V A  4500 3.54 44.4   21   *   19.94      14.44    *   26.51      15.16    *
*                                                                           *                       *                     *
* REFERENCE VALUE                                                           *                       *                     *
* DISTRIBUTOR  3228264        AND CARBURETOR  SF3227442                     *   19.57      14.42    *   26.46      15.13    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                       *                     *
* AMC     HORNET SW      D50-330          C 304 2V A  4000 3.15 42.1  457   *   19.76      14.60    *   26.92      15.11    *
* AMC     GREMLIN        D54-180          C 304 2V A  3500 2.87 38.2  454   *   18.40      14.65    *   25.09      15.13    *
* AMC     MATADOR SW     D58-270          C 304 [illegible] A  4500 3.54 44.4  438   *   20.46      14.55    *   27.74      15.09    *
*                                                                           *                       *                     *
* REFERENCE VALUE                                                           *                       *                     *
* DISTRIBUTOR  3228263        AND CARBURETOR  SF5355513                     *   19.17      14.36    *   25.37      15.27    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                       *                     *
* AMC     CJ7 JEEP       D50-110          F 304 2V A  3500 3.54 46.3  771   *   21.22      14.66    *   28.58      15.26    *
*                                                                           *                       *                     *
* REFERENCE VALUE                                                           *                       *                     *
* DISTRIBUTOR  3874298-318  AND CARBURETOR  4006645-318                     *   21.99      16.11    *   33.98      16.85    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                       *                     *
* CHRYSL  PLYMOUTH          4094          F 318 2V A  4000 2.45 32.8   41   *   18.50      16.12    *   28.27      16.89    *
* CHRYSL  PLYMOUTH          4096          F 318 2V A  3500 3.21 44.4   40   *   24.09      16.32    *   37.89      16.88    *
* CHRYSL  DODGE DART        4097          F 318 2V A  3500 2.45 32.8   37   *   18.70      16.20    *   28.79      16.91    *
*                                                                           *                       *                     *
* REFERENCE VALUE                                                           *                       *                     *
* DISTRIBUTOR  3874754-318  AND CARBURETOR  4006615-318                     *   27.02      16.42    *   34.00      17.35    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                       *                     *
* CHRYSL  DODGE             4058          F 318 2V A  4000 2.45 32.8   42   *   22.74      16.43    *   28.37      17.39    *
* CHRYSL  DODGE LL29        4069          F 318 2V A  3500 2.76 37.6   39   *   25.72      16.57    *   32.67      17.40    *
* CHRYSL  DODGE             4092          F 318 2V A  4500 2.45 29.6   44   *   20.71      16.30    *   25.43      17.37    *
*                                                                           *                       *                     *
* REFERENCE VALUE                                                           *                       *                     *
* DISTRIBUTOR  3874754-318  AND CARBURETOR  4006616-318                     *   27.02      16.07    *   34.00      17.10    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                       *                     *
* CHRYSL  CORONET           4156          C 318 2V A  4500 3.21 42.4  484   *   27.86      16.08    *   35.14      17.10    *
* CHRYSL  CORONET           4159          C 318 2V A  4000 2.71 36.3  482   *   24.71      16.11    *   31.08      17.13    *
* CHRYSL  CORONET           4176          C 318 2V A  4500 2.71 33.6  483   *   22.94      15.99    *   28.46      17.12    *
* CHRYSL  PLY. FURY         4177          C 318 2V A  4000 2.45 32.3  481   *   22.45      16.07    *   27.99      17.14    *
* CHRYSL  PLY. VALIANT      4178          C 318 2V A  3500 3.21 44.4  480   *   29.60      16.28    *   38.03      17.14    *
*******************************************************************************************************************
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Table 5-19. Fuel-Weighted Calibration Factors
Reference Vehicle 4500/A/3.21, 318 CID (Continued)

```
****************************************************************************************************************
* PROGRAM VSIMII *    318CID, AUTOMATIC, 4500LB, 40.9N/V            *  RUN ON  10/30/76  AT  11.21.06   PAGE  2 *
****************************************************************************************************************
*                                   *                               *        FTP-URBAN       *    FTP-HIGHWAY    *
*                                   *                               ********************************************
*                                   *                               *    FUEL WEIGHTED       *   FUEL WEIGHTED   *
*                                   *                               ********************************************
*                                   *                               *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                                   *                               * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
****************************************************************************************************************
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  3874090-318  AND CARBURETOR  3870965-318                *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *  28.75     16.41   *  36.56     16.93   *
* CHRYSL DODGE TRUCK   E158              F 318 2V A  4000 3.21 40.1 777 *  28.58     16.49   *  36.57     16.95   *
* CHRYSL DODGE RMCHRGR E182              F 318 2V A  4000 2.71 31.3 776 *  23.29     16.39   *  29.26     16.97   *
* CHRYSL DODGE D1 C/C  F186              C 318 2V A  4500 2.71 31.3 890 *  23.04     16.30   *  28.72     16.95   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  D5DE12127AFA AND CARBURETOR  D5WE-9510-FA               *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *  25.86     14.78   *  32.18     15.29   *
* FORD   COMET          5K1-302-4-266G F 302 2V A  3500 3.00 41.7 105 *  26.08     15.05   *  32.91     15.29   *
* FORD   GRANADA        501-302-4-266G F 302 2V A  4000 2.75 37.8 113 *  23.76     14.93   *  29.55     15.27   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  D5DE12127AFA AND CARBURETOR  D5DE9510-AEA               *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *  27.72     14.48   *  34.21     14.99   *
* FORD   COMET          5K1-302-4-264D C 302 2V A  3500 3.00 41.7 508 *  27.95     14.75   *  34.99     14.98   *
* FORD   GRANADA        501-302-4-265D C 302 2V A  4000 2.75 38.4 515 *  25.80     14.64   *  31.88     14.97   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  D5DE12127AFA AND CARBURETOR  D5WE-9510-FA               *  26.26     14.58   *  32.53     15.08   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                     *
* FORD                  521-302-4-274K                                 *                     *                     *
* FORD                  521-302-4-276K                                 *                     *                     *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  D5DE12127AFA AND CARBURETOR  D5DE9510-AEA               *  26.09     14.08   *  32.44     14.53   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                     *
* FORD   MUSTANG        571-302-4-273C C 302 2V A  3500 2.79 42.0 506 *  26.47     14.34   *  33.40     14.53   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  D6DE12127JA  AND CARBURETOR  D6ZE-9510-JA               *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *  31.75     15.36   *  40.77     15.73   *
* FORD   MUSTANG        671-302-4-1F   F 302 2V A  3500 3.00 42.0 107 *  32.22     15.95   *  41.97     15.72   *
* FORD   MUSTANG        671-302-4-3F   F 302 2V A  3500 2.79 39.1 104 *  30.33     15.82   *  39.31     15.73   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  D5TE12127TA  AND CARBURETOR  D6TE-9510-GA               *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *  14.71     13.93   *  17.92     14.72   *
* FORD   BRONCO         5T1-302-4-22C  C 302 2V A  4000 3.00 41.0 395 *  14.47     14.11   *  17.72     14.70   *
****************************************************************************************************************
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Table 5-19. Fuel-Weighted Calibration Factors
Reference Vehicle 4500/A/3.21, 318 CID (Continued)

```
***************************************************************************************************************
* PROGRAM VSIMII *   318CID, AUTOMATIC, 4500LB, 40.9N/V            *  RUN ON  10/30/76  AT  11.21.06   PAGE  3 *
*****************************************************************************************************************
*                                 *                                *         FTP-URBAN       *     FTP-HIGHWAY   *
*                                 *                                ***********************************************
*                                 *                                *    FUEL WEIGHTED        *   FUEL WEIGHTED   *
*                                 *                                ***********************************************
*                                 *                                * ADVANCE  * AIR/FUEL * ADVANCE  * AIR/FUEL *
*                                 *                                * (DEGREE) *  RATIO   * (DEGREE) *  RATIO   *
***************************************************************************************************************
*                                                                     *                      *                   *
* REFERENCE VALUE                                                     *    2.92     13.92    *    8.35    14.52  *
* DISTRIBUTOR  D5TE12127ALA AND CARBURETOR  D5TE-9510-PA              *                      *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                   *
* FORD   F-100 LWB     6F1-302-4-16F  F 302 2V A  4000 3.00 38.0 794  *    2.69     14.07    *    7.71    14.51  *
*                                                                     *                      *                   *
* REFERENCE VALUE                                                     *   14.71     13.92    *   17.92    14.52  *
* DISTRIBUTOR  D5TE12127TA  AND CARBURETOR  D5TE-9510-PA              *                      *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                   *
* FORD   F-100 LWB     6F1-302-4-16F                                  *                      *                   *
*                                                                     *                      *                   *
* REFERENCE VALUE                                                     *   14.71     13.97    *   17.92    14.42  *
* DISTRIBUTOR  D5TE12127TA  AND CARBURETOR  D5TE9510-BJA              *                      *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                   *
* FORD   F-100 LWB     6F1-302-4-16F                                  *                      *                   *
*                                                                     *                      *                   *
* REFERENCE VALUE                                                     *   14.84     13.52    *   22.16    14.43  *
* DISTRIBUTOR  D5TE12127MA  AND CARBURETOR  D5TE9510-CBA              *                      *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                   *
* FORD   F-100 LWB     6F1-300-4-4F   F 300 1V A  4500 3.00 35.0 802  *   12.61     13.58    *   18.57    14.39  *
*                                                                     *                      *                   *
* REFERENCE VALUE                                                     *   20.20     12.45    *   30.51    13.58  *
* DISTRIBUTOR  D6TE12127AA  AND CARBURETOR  D6TE-9510-DA              *                      *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                   *
* FORD   F-100         6U1-300-4-5C   C 300 1V A  4000 3.50 45.0 894  *   21.51     12.55    *   32.84    13.55  *
*                                                                     *                      *                   *
* REFERENCE VALUE                                                     *   10.19     15.13    *   23.99    15.24  *
* DISTRIBUTOR  1112983-9222 AND CARBURETOR  17056105N653              *                      *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                   *
* GMC                  113E                                           *                      *                   *
*                                                                     *                      *                   *
* REFERENCE VALUE                                                     *   15.92     15.29    *   23.40    15.27  *
* DISTRIBUTOR  1112983099221 AND CARBURETOR  17056102N684             *                      *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                   *
* GMC    MONZA         112F           F 262 2V A  3500 2.56 37.5 197  *   23.07     15.77    *   19.96    15.16  *
*                                                                     *                      *                   *
* REFERENCE VALUE                                                     *   20.92     15.03    *   29.92    15.12  *
* DISTRIBUTOR  111297709416 AND CARBURETOR  17056108N771              *                      *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                   *
* GMC    MALIBU        111F           F 305 2V A  4500 2.73 34.7 223  *   17.81     15.06    *   24.28    15.10  *
***************************************************************************************************************
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Table 5-19. Fuel-Weighted Calibration Factors
Reference Vehicle 4500/A/3.21. 318 CID (Continued)

```
*****************************************************************************************************************
* PROGRAM VSIMII *   318CID, AUTOMATIC, 4500LB, 40.9N/V                 *  RUN ON  10/30/76  AT  11.21.06   PAGE  4 *
*****************************************************************************************************************
*                               *                                       *       FTP-URBAN      *     FTP-HIGHWAY     *
*                               *                                       **********************************************
*                               *                                       *    FUEL WEIGHTED     *    FUEL WEIGHTED    *
*                               *                                       **********************************************
*                               *                                       *  ADVANCE * AIR/FUEL  * ADVANCE * AIR/FUEL  *
*                               *                                       * (DEGREE) *  RATIO    * (DEGREE) *  RATIO   *
*****************************************************************************************************************
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *  20.56      15.04    *  28.24      15.23     *
* DISTRIBUTOR  1112977-9405 AND CARBURETOR  17056104N956                *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     MONZA          114F            F 305 2V A  3500 2.29 33.5 201 *  17.37      15.22    *  23.83      15.24     *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *  22.00      15.03    *  29.45      15.21     *
* DISTRIBUTOR  1112977C155  AND CARBURETOR  17056110N587                *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     CONCOURS HB    118F            F 305 2V A  4000 3.08 41.4 211 *  21.94      15.20    *  29.56      15.19     *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *  11.72      14.83    *  18.87      14.83     *
* DISTRIBUTOR  1103209-9267 AND CARBURETOR  17056402N271                *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     MONZA          5C2C            C 262 2V A  3500 2.56 37.5 575 *  10.01      15.33    *  16.10      14.73     *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *  14.91      15.39    *  22.30      15.52     *
* DISTRIBUTOR  1112992C120  AND CARBURETOR  17056410N376                *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     NOVA           5C1C            C 305 2V A  4000 2.73 36.2 582 *  13.27      15.51    *  19.81      15.51     *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *  32.87      16.40    *  42.87      16.92     *
* DISTRIBUTOR  1112995-6    AND CARBURETOR  17056156-1                  *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     OMEGA          371F            F 260 2V A  4000 2.56 34.0 240 *  25.52      17.25    *  32.74      16.78     *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *  32.98      15.79    *  42.27      16.72     *
* DISTRIBUTOR  1112995-4    AND CARBURETOR  17056158-2                  *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     CUTLASS        373E            F 260 2V A  4500 3.08 40.0 247 *  28.98      17.21    *  36.70      16.55     *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *  27.49      16.57    *  28.95      16.56     *
* DISTRIBUTOR  1103211-1A   AND CARBURETOR  17056455-2                  *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     CUTLASS        383C            C 260 2V A  4500 3.08 40.0 595 *  18.01      17.02    *  25.14      16.39     *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *  24.00      16.52    *  32.92      16.74     *
* DISTRIBUTOR  1103208-2    AND CARBURETOR  17056455-3                  *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     OMEGA          381C            C 260 2V A  4000 2.73 36.2 590 *  19.61      16.99    *  26.60      16.60     *
*****************************************************************************************************************
```

Table 5-19. Fuel-Weighted Calibration Factors
Reference Vehicle 4500/A/3.21, 318 CID (Concluded)

```
**************************************************************************************************
* PROGRAM VSIMII *   318CID, AUTOMATIC, 4500LB, 40.9N/V       *  RUN ON  10/30/76  AT  11.21.06   PAGE  5 *
**************************************************************************************************
*                      *                                      *        FTP-URBAN      *      FTP-HIGHWAY      *
*                      *                                      ***********************************************
*                      *                                      *     FUEL WEIGHTED     *     FUEL WEIGHTED     *
*                      *                                      ***********************************************
*                      *                                      *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL  *
*                      *                                      * (DEGREE)  *   RATIO   * (DEGREE)  *   RATIO   *
**************************************************************************************************
*                                                                    *                       *                       *
*                                                                    *                       *                       *
* REFERENCE VALUE                                                    *    4.39      24.44    *   11.47      27.55    *
* DISTRIBUTOR  097.07.0102  AND CARBURETOR  097.08.0001              *                       *                       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                       *                       *
* ASTON  COUPE          V8/11292LCA    F 326 3V A  4500 3.07 35.7 613 *    3.98      24.27    *   10.30      27.61    *
**************************************************************************************************
```

Table 5-20. Fuel-Weighted Calibration Factors
Reference Vehicle 4500/M-3/3.21, 318 CID

```
****************************************************************************************************************************
* PROGRAM VSIMII *   318CID, MANUAL, 4500LB, 40.9N/V                              *  RUN ON  10/30/76  AT  11.22.55   PAGE  1 *
****************************************************************************************************************************
*                                *                                              *        FTP-URBAN        *       FTP-HIGHWAY       *
*                                *                                              ***************************************************
*                                *                                              *     FUEL WEIGHTED       *      FUEL WEIGHTED      *
*                                *                                              ***************************************************
*                                *                                              *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                                *                                              * (DEGREE) *   RATIO   * (DEGREE) *   RATIO   *
****************************************************************************************************************************
*                                                                                    *                      *                      *
* REFERENCE VALUE                                                                    *                      *                      *
* DISTRIBUTOR   3228264        AND CARBURETOR   SF3227443                            *   19.17     14.85    *   28.79     15.89    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                          *                      *                      *
* AMC     GREMLIN         D54-14D            F 304 2V M3 3500 2.87 38.2  13          *   18.03     15.07    *   27.29     15.90    *
*                                                                                    *                      *                      *
* REFERENCE VALUE                                                                    *                      *                      *
* DISTRIBUTOR   3228264        AND CARBURETOR   SF3227443                            *   24.45     14.86    *   31.54     15.91    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                          *                      *                      *
* AMC     HORNET          D50-29D            C 304 2V M3 3500 3.54 48.9 456          *   28.37     15.19    *   37.50     15.89    *
*                                                                                    *                      *                      *
* REFERENCE VALUE                                                                    *                      *                      *
* DISTRIBUTOR   3228264        AND CARBURETOR   SF3227443                            *   19.18     14.86    *   28.76     15.96    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                          *                      *                      *
* AMC     CJ5 JEEP        D5U-5D             F 304 2V M3 3500 3.54 46.3 772          *   21.24     15.17    *   32.51     15.95    *
* AMC     CJ7 JEEP        D5U-12D            F 304 2V M3 3500 4.09 53.4 773          *   24.04     15.24    *   37.11     15.93    *
*                                                                                    *                      *                      *
* REFERENCE VALUE                                                                    *                      *                      *
* DISTRIBUTOR   3874754-318  AND CARBURETOR   4006617-318                            *   26.28     16.23    *   33.75     17.12    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                          *                      *                      *
* CHRYSL PLY. FURY        4061               F 318 2V M4 3500 2.94 27.6  39          *   19.46     16.27    *   24.61     17.19    *
* CHRYSL PLY. FURY        4062               F 318 2V M3 4500 3.21 41.8  47          *   26.77     16.24    *   34.43     17.12    *
*                                                                                    *                      *                      *
* REFERENCE VALUE                                                                    *                      *                      *
* DISTRIBUTOR   3874090-318  AND CARBURETOR   3870970-318                            *   27.64     16.58    *   35.24     17.40    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                          *                      *                      *
* CHRYSL DODGE VAN        E184               C 318 2V M3 4500 3.55 44.3 891          *   29.56     16.62    *   38.99     17.39    *
*                                                                                    *                      *                      *
* REFERENCE VALUE                                                                    *                      *                      *
* DISTRIBUTOR   3874090-318  AND CARBURETOR   3870971-318                            *   27.64     16.29    *   36.24     17.46    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                          *                      *                      *
* CHRYSL DODGE TRUCK      E16C               F 318 2V M4 4500 3.55 44.3 783          *   29.58     16.33    *   38.99     17.46    *
*                                                                                    *                      *                      *
* REFERENCE VALUE                                                                    *                      *                      *
* DISTRIBUTOR   D5DE12127AGA AND CARBURETOR   D5DE9510-HFA                           *   26.18     13.49    *   34.86     14.56    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                          *                      *                      *
* FORD    GRANADA         502-302-4-269G F 302 2V M3 4000 3.07 41.1 116              *   25.81     13.55    *   34.49     14.53    *
* FORD    MAVERICK        502-302-4-280G F 302 2V M3 3500 2.79 38.4 105              *   24.63     13.71    *   33.31     14.56    *
****************************************************************************************************************************
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Table 5-20. Fuel-Weighted Calibration Factors
Reference Vehicle 4500/M-3/3.21, 318 CID (Continued)

```
*****************************************************************************************************
* PROGRAM VSIMII *   318CID, MANUAL, 4500LB, 40.9N/V              * RUN ON  10/30/76  AT  11.22.55   PAGE  2 *
*****************************************************************************************************
*                              *                                   *       FTP-URBAN      *     FTP-HIGHWAY      *
*                              *                                   ***********************************************
*                              *                                   *    FUEL WEIGHTED     *    FUEL WEIGHTED     *
*                              *                                   ***********************************************
*                              *                                   *  ADVANCE * AIR/FUEL * ADVANCE  * AIR/FUEL *
*                              *                                   * (DEGREE) *  RATIO   * (DEGREE) *  RATIO   *
*****************************************************************************************************
*                                                                  *                     *                     *
* REFERENCE VALUE                                                  *  26.18     13.49    *  34.80     14.56    *
* DISTRIBUTOR  D5DE12127AGA AND CARBURETOR  D5DE9510-HFA            *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                     *                     *
* FORD   MONARCH      5K2-302-4-267G F 302 2V M3 4000 2.75 36.8 114 *  23.52     13.62    *  31.19     14.54    *
*                                                                  *                     *                     *
* REFERENCE VALUE                                                  *  17.78     13.97    *  25.75     14.54    *
* DISTRIBUTOR  D6TE12127CA  AND CARBURETOR  D6TE-9510-FA            *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                     *                     *
* FORD   F-100 LWB    5F2-302-4-21C  C 302 2V M4 4000 3.50 44.0 399 *  18.57     14.19    *  27.16     14.51    *
*                                                                  *                     *                     *
* REFERENCE VALUE                                                  *  17.78     14.18    *  26.34     14.62    *
* DISTRIBUTOR  D5TE12127SA  AND CARBURETOR  D5TE-9510-LA            *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                     *                     *
* FORD   BRONCO       6T2-302-4-7F   F 302 2V M3 4000 4.11 53.0 800 *  21.82     14.47    *  32.63     14.57    *
*                                                                  *                     *                     *
* REFERENCE VALUE                                                  *  17.78     13.94    *  26.04     14.44    *
* DISTRIBUTOR  D5TE12127SA  AND CARBURETOR  D5TE9510-BMA            *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                     *                     *
* FORD   F-100 LWB    6F2-302-4-14F  F 302 2V M3 4000 3.50 44.0 798 *  18.57     14.15    *  27.47     14.41    *
*                                                                  *                     *                     *
* REFERENCE VALUE                                                  *  14.39     13.36    *  23.31     14.34    *
* DISTRIBUTOR  D5TE12127NA  AND CARBURETOR  D5TE9510-APA            *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                     *                     *
* FORD   F-100 LWB    6F2-300-4-1F   F 300 1V M3 4000 3.00 38.0 771 *  13.23     13.31    *  21.42     14.51    *
*                                                                  *                     *                     *
* REFERENCE VALUE                                                  *  16.71     12.37    *  30.08     13.54    *
* DISTRIBUTOR  D6TE12127AA  AND CARBURETOR  D6TE-9510-JA            *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                     *                     *
* FORD   E-100        6U2-300-4-3C   C 300 1V M3 4500 3.50 44.0 902 *  19.27     12.49    *  31.02     13.49    *
*                                                                  *                     *                     *
* REFERENCE VALUE                                                  *  19.84     14.53    *  28.48     15.43    *
* DISTRIBUTOR  1112977-9411 AND CARBURETOR  17056111N338            *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                     *                     *
* GMC    CAMARO L/T   115F           F 305 2V M3 4000 3.08 41.4 212 *  19.79     14.73    *  28.59     15.41    *
*                                                                  *                     *                     *
* REFERENCE VALUE                                                  *  28.59     16.67    *  37.57     16.59    *
* DISTRIBUTOR  1112994-2    AND CARBURETOR  17056157-6              *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                     *                     *
* GMC    OMEGA        374F           F 260 2V M3 4000 3.08 41.4 242 *  26.15     17.17    *  34.36     16.44    *
*****************************************************************************************************
```

Table 5-20. Fuel-Weighted Calibration Factors
Reference Vehicle 4500/M-3/3.21, 318 CID (Concluded)

```
*****************************************************************************************************
* PROGRAM VSIMIT *   318CID, MANUAL, 4500LB, 40.9N/V               *  RUN ON  10/30/76  AT  11.22.55   PAGE  3 *
*****************************************************************************************************
*                                                                  *       FTP-URBAN      *      FTP-HIGHWAY      *
*                                 *                                ***************************************************
*                                 *                                *     FUEL WEIGHTED    *     FUEL WEIGHTED     *
*                                 *                                ***************************************************
*                                 *                                *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL  *
*                                 *                                * (DEGREE) *  RATIO   * (DEGREE) *  RATIO    *
*****************************************************************************************************
*                                                                        *                    *                     *
* REFERENCE VALUE                                                        *                    *                     *
* DISTRIBUTOR  1112994-1    AND CARBURETOR  17056157-1                   *   29.30    16.41   *   38.10     16.60   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                     *
* GMC     CUTLASS         375F1             F 260 2V M5 4500 2.73 34.7 246 *   22.88    16.76   *   29.09     16.44   *
*                                                                        *                    *                     *
* REFERENCE VALUE                                                        *                    *                     *
* DISTRIBUTOR  1103204-1    AND CARBURETOR  17056457-1                   *   23.22    16.18   *   32.01     16.57   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                     *
* GMC     CUTLASS         384C              C 260 2V M5 4500 2.73 34.7 593 *   18.13    16.53   *   24.44     16.41   *
*                                                                        *                    *                     *
* REFERENCE VALUE                                                        *                    *                     *
* DISTRIBUTOR  1103204-2    AND CARBURETOR  17056457-3                   *   23.41    16.39   *   32.12     16.81   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                     *
* GMC     OMEGA           385C              C 260 2V M5 4000 2.73 35.9 591 *   19.44    16.86   *   26.41     16.66   *
*****************************************************************************************************
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Table 5-21. Fuel-Weighted Calibration Factors
Reference Vehicle 4000/A/3.15, 258 CID

```
*******************************************************************************************************
* PROGRAM VSIMII *   258CID, AUTOMATIC, 4000LB, 39.0N/V             *  RUN ON  12/30/76  AT  11.33.50   PAGE  1 *
*******************************************************************************************************
*                          *                                        *      FTP-URBAN      *     FTP-HIGHWAY     *
*                          *                                        ***********************************************
*                          *                                        *    FUEL WEIGHTED    *    FUEL WEIGHTED    *
*                          *                                        ***********************************************
*                          *                                        *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                          *                                        * (DEGREE) *  RATIO   * (DEGREE) *  RATIO   *
*******************************************************************************************************
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *  13.08      15.26   *  14.41      15.84   *
* DISTRIBUTOR  3227331       AND CARBURETOR  DX31                   *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* AMC    PACER          D66-55K        C 258 2V A  3500 3.08 41.0 451 *  13.82      15.38   *  15.41      15.86   *
* AMC                   D56-14K                                     *                     *                     *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *  13.39      15.54   *  14.74      16.16   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF3227437              *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* AMC    PACER          D66-11K        F 258 2V A  3500 3.08 41.0  11 *  14.13      15.66   *  13.76      16.18   *
* AMC    PACER          D66-36K        F 258 2V A  3500 2.53 39.6   8 *  11.96      15.58   *  13.15      16.20   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *  13.38      15.20   *  14.74      15.93   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF3227422              *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* AMC    PACER          D56-16K        F 258 1V A  3500 2.73 36.3   9 *  12.75      15.27   *  14.10      15.96   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *  16.14      14.56   *  15.13      15.68   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF3227424              *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* AMC    PACER          D66-25K        C 258 1V A  3500 3.08 41.0 452 *  17.04      14.67   *  16.17      15.70   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *  13.39      15.24   *  14.74      15.94   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF3227422              *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* AMC    CJ7 JEEP       D60-7K         F 258 1V A  3500 4.09 53.4 770 *  17.77      15.48   *  20.13      15.93   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *  13.34      14.63   *  14.74      15.78   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF3227424              *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* AMC    CJ7 JEEP       D60-1K         C 258 1V A  3000 4.09 53.4 892 *  17.96      14.95   *  20.54      15.79   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *  13.35      14.94   *  14.74      15.47   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF5902377A             *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* AMC    POST OFFICE    P076-3         C 258 1V A  4000 3.73 47.9 885 *  15.95      15.03   *  17.32      15.46   *
*                                                                   *                     *                     *
* REFERENCE VALUE                                                   *  12.43      16.44   *  13.15      16.22   *
* DISTRIBUTOR  1112463A074   AND CARBURETOR  17056018-348           *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                     *
* GMC    MALIBU         616F1          F 250 1V A  4500 3.08 40.0 221 *  12.31      16.42   *  12.92      16.16   *
*******************************************************************************************************
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Table 5-21. Fuel-Weighted Calibration Factors
Reference Vehicle 4000/A/3.15, 258 CID (Continued)

```
***********************************************************************************************************
* PROGRAM VSIMII *   258CID, AUTOMATIC, 4000LB, 39.0N/V           *  RUN ON  10/30/76  AT  11.33.50   PAGE  2 *
***********************************************************************************************************
*                            *                                    *      FTP-URBAN       *    FTP-HIGHWAY     *
*                            *                                    *************************************************
*                            *                                    *    FUEL WEIGHTED     *   FUEL WEIGHTED    *
*                            *                                    *************************************************
*                            *                                    * ADVANCE  * AIR/FUEL * ADVANCE  * AIR/FUEL *
*                            *                                    * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
***********************************************************************************************************
*                                                                 *                    *                     *
* REFERENCE VALUE                                                 *  13.59     16.18   *  14.63     17.80    *
* DISTRIBUTOR  1112863E140  AND CARBURETOR  17056012-642          *                    *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES       *                    *                     *
* GMC    NOVA          513E         F 250 1V A  3500 3.08 41.4 198 *  14.21     16.37   *  15.47     17.79    *
*                                                                 *                    *                     *
* REFERENCE VALUE                                                 *  13.41     16.24   *  14.75     17.83    *
* DISTRIBUTOR  1112863A978  AND CARBURETOR  17056012-929          *                    *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES       *                    *                     *
* GMC    NOVA          511F         F 250 1V A  4000 2.73 36.2 203 *  12.37     16.28   *  13.51     17.80    *
*                                                                 *                    *                     *
* REFERENCE VALUE                                                 *  15.23     14.85   *  20.22     15.81    *
* DISTRIBUTOR  1110662A954  AND CARBURETOR  17056016N865          *                    *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES       *                    *                     *
* GMC    NOVA          531F         F 250 1V A  3500 2.73 36.2 196 *  14.22     14.98   *  18.92     15.81    *
*                                                                 *                    *                     *
* REFERENCE VALUE                                                 *  13.45     15.76   *  14.26     17.27    *
* DISTRIBUTOR  1112863E143  AND CARBURETOR  17056314-531          *                    *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES       *                    *                     *
* GMC    NOVA          521C         C 250 1V A  4000 2.73 36.2 579 *  12.41     15.80   *  13.06     17.24    *
*                                                                 *                    *                     *
* REFERENCE VALUE                                                 *  12.69     15.66   *  13.91     17.16    *
* DISTRIBUTOR  1112863E149  AND CARBURETOR  17056314-917          *                    *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES       *                    *                     *
* GMC    CAMARO        523C         C 250 1V A  4000 3.08 41.4 581 *  13.11     15.75   *  14.41     17.12    *
*                                                                 *                    *                     *
* REFERENCE VALUE                                                 *  13.19     15.60   *  14.35     17.41    *
* DISTRIBUTOR  1112863E148  AND CARBURETOR  17056314-629          *                    *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES       *                    *                     *
* GMC    MALIBU        524C         C 250 1V A  4000 2.73 33.9 590 *  11.52     15.82   *  12.39     17.39    *
*                                                                 *                    *                     *
* REFERENCE VALUE                                                 *  12.80     15.36   *  13.17     16.51    *
* DISTRIBUTOR  1112863      AND CARBURETOR  17056002N342          *                    *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES       *                    *                     *
* GMC    CHEVY VAN     91FF1        F 250 1V A  4000 3.73 48.5 828 *  15.15     15.32   *  15.79     16.46    *
*                                                                 *                    *                     *
* REFERENCE VALUE                                                 *  13.10     15.14   *  14.16     16.26    *
* DISTRIBUTOR  1112863E029  AND CARBURETOR  17056004N048          *                    *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES       *                    *                     *
* GMC    FLEETSIDE P/U 914E         F 250 1V A  4500 3.40 38.6 832 *  12.60     15.11   *  13.47     16.21    *
***********************************************************************************************************
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Table 5-21. Fuel-Weighted Calibration Factors
Reference Vehicle 4000/A/3.15, 258 CID (Concluded)

```
*********************************************************************************************************************
* PROGRAM VSIMII *    258CID, AUTOMATIC, 4000LB, 39.0N/V             *  RUN ON  10/30/76  AT  11.33.50    PAGE  3 *
*********************************************************************************************************************
*                                  *                                 *         FTP-URBAN       *    FTP-HIGHWAY      *
*                                  *                                 ***********************************************
*                                  *                                 *     FUEL WEIGHTED       *   FUEL WEIGHTED     *
*                                  *                                 ***********************************************
*                                  *                                 *  ADVANCE  * AIR/FUEL  * ADVANCE  * AIR/FUEL *
*                                  *                                 * (DEGREE)  *   RATIO   * (DEGREE) *  RATIO   *
*********************************************************************************************************************
*                                                                     *                      *                       *
* REFERENCE VALUE                                                     *                      *                       *
* DISTRIBUTOR  C43905        AND CARBURETOR  C43533,4                 *                      *                       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *     6.51     13.35   *    14.21     14.21    *
* PANTHE PANTHER J.72  W-224-L                                        *                      *                       *
*                                                                     *                      *                       *
* REFERENCE VALUE                                                     *                      *                       *
* DISTRIBUTOR  0021581801    AND CARBURETOR  F10000700506             *                      *                       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *     5.37     14.56   *    12.18     15.31    *
* MERCED M-B 116V       116E405          C 276 FI A  4500 3.06 42.2 631 *     5.90     14.36   *    13.37     15.35    *
* MERCED M-B 107        107E606          C 276 FI A  4000 3.06 42.1 630 *     5.95     14.45   *    13.63     15.37    *
*                                                                     *                      *                       *
* REFERENCE VALUE                                                     *                      *                       *
* DISTRIBUTOR  C45829        AND CARBURETOR  C45857/45858             *                      *                       *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *    16.24     13.22   *    21.33     14.13    *
* JAGUAR XJ6L           XJ 31-18         F 258 2V A  4500 3.31 43.5 330 *    17.61     13.18   *    23.09     14.10    *
*                                                                     *                      *                       *
* REFERENCE VALUE                                                     *                      *                       *
* DISTRIBUTOR  1112863       AND CARBURETOR  17056314                 *    13.31     15.27   *    14.45     16.51    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                       *
* CHECKE MALIBU CPE     524C             C 250 1V A  4000 2.73 33.9 625 *    11.62     15.28   *    12.48     16.49    *
*                                                                     *                      *                       *
* REFERENCE VALUE                                                     *                      *                       *
* DISTRIBUTOR  1112863       AND CARBURETOR  17056312,614             *    13.31     15.88   *    14.45     17.14    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                      *                       *
* CHECKE NOVA CPE       511E             F 250 1V A  4000 2.73 36.2 295 *    12.27     15.92   *    13.24     17.12    *
*********************************************************************************************************************
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Table 5-22. Fuel-Weighted Calibration Factors
Reference Vehicle 4000/M-3/3.15, 258 CID

```
*******************************************************************************************************
* PROGRAM VSIMII *   258CID, MANUAL, 4000LB, 39.0N/V                * RUN ON  10/30/76  AT  11.45.39   PAGE  1 *
*******************************************************************************************************
*                              *                                    *       FTP-URBAN       *      FTP-HIGHWAY      *
*                              *                                    *************************************************
*                              *                                    *     FUEL WEIGHTED     *     FUEL WEIGHTED     *
*                              *                                    *************************************************
*                              *                                    *  ADVANCE  * AIR/FUEL *  ADVANCE  * AIR/FUEL *
*                              *                                    * (DEGREE)  *  RATIO   * (DEGREE)  *  RATIO   *
*******************************************************************************************************
*                                                                   *                       *                       *
* REFERENCF VALUE                                                   *                       *                       *
* DISTRIBUTOR  3227331        AND CARBURETOR  SF3227425             *   12.89     14.02     *   14.24     15.63     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VFHICLES          *                       *                       *
* AMC    MATADOR        D51-15K        F 258 1V M3 4000 3.54 47.8  19 *   15.35     14.10     *   17.17     15.61     *
* AMC    MATADOR        D58-34K        F 258 1V M3 4000 3.15 39.0  16 *   12.89     14.32     *   14.24     15.63     *
*                                                                   *                       *                       *
* REFERENCE VALUE                                                   *                       *                       *
* DISTRIBUTOR  3227331        AND CARRURETOR  SF3228747             *   12.89     16.14     *   14.24     16.86     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                       *                       *
* AMC    GREMLIN        D54-13K        F 258 1V MO 3000 2.73 37.1   4 *   12.60     16.32     *   14.18     16.91     *
*                                                                   *                       *                       *
* REFERENCE VALUE                                                   *                       *                       *
* DISTRIBUTOR  3227331        AND CARBURETOR  SF3228747             *   16.01     16.37     *   14.50     16.78     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                       *                       *
* AMC    GREMLIN        D54-26K        C 258 1V MO 3500 3.08 41.9 453 *   17.23     16.20     *   15.81     16.80     *
*                                                                   *                       *                       *
* REFERENCE VALUE                                                   *                       *                       *
* DISTRIBUTOR  3227331        AND CARBURETOR  SF3227425             *   12.89     14.08     *   14.24     15.73     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                       *                       *
* AMC    CJ7 JEEP       D5U-15K        C 258 1V M4 3000 4.09 53.4 883 *   17.33     14.39     *   19.84     15.74     *
*                                                                   *                       *                       *
* REFERENCE VALUE                                                   *                       *                       *
* DISTRIBUTOR  3227331        AND CARBURETOR  SF5355705             *   12.89     15.84     *   14.24     16.29     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                       *                       *
* AMC    CJ5 JEEP       D5U-3K         F 258 1V M3 3500 4.09 53.4 769 *   17.13     16.09     *   19.44     16.28     *
* AMC    CJ7 JEEP       D5U-4K         F 258 1V M4 3000 4.09 53.4 767 *   16.33     16.42     *   18.59     16.21     *
*                                                                   *                       *                       *
* REFERENCE VALUE                                                   *                       *                       *
* DISTRIBUTOR  1110666E034    AND CARBURETOR  17056013-326          *   17.07     16.86     *   17.48     17.27     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                       *                       *
* GMC    NOVA           514E           F 250 1V M3 4000 3.08 41.4 209 *   17.54     16.96     *   18.11     17.23     *
*                                                                   *                       *                       *
* REFERENCE VALUF                                                   *                       *                       *
* DISTRIBUTOR  1110666EC46    AND CARBURFTOR  17056013-713          *   17.14     16.69     *   17.10     17.14     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                       *                       *
* GMC    MALIBU         516E           F 250 1V M3 4000 2.73 33.9 205 *   14.97     16.70     *   14.77     17.12     *
*                                                                   *                       *                       *
* REFERENCE VALUE                                                   *                       *                       *
* DISTRIBUTOR  1112863EC3C    AND CARBURETOR  7045303N99            *   12.59     15.22     *   13.27     17.15     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                       *                       *
* GMC    FLEETSIDE P/U 913F            F 250 1V M4 4000 4.11 51.7 930 *   15.74     15.42     *   15.39     17.13     *
*******************************************************************************************************
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Table 5-22. Fuel-Weighted Calibration Factors
Reference Vehicle 4000/M-3/3.15, 258 CID (Concluded)

```
*************************************************************************************************************
* PROGRAM VSIMII *   258CID, MANUAL, 4000LB, 39.ON/V                    *  RUN ON  10/30/76  AT  11.45.39   PAGE  2 *
*************************************************************************************************************
*                          *                                             *      FTP-URBAN       *     FTP-HIGHWAY     *
*                          *                                             ****************************************************
*                          *                                             *    FUEL WEIGHTED     *    FUEL WEIGHTED    *
*                          *                                             ****************************************************
*                          *                                             *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                          *                                             * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
*************************************************************************************************************
*                                                                            *                      *                     *
* REFERENCE VALUE                                                            *  17.31      14.99    *  17.92      15.90   *
* DISTRIBUTOR  1110666EC25  AND CARBURETOR  17056C03N866                     *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *                      *                     *
* GMC    FLEETSIDE P/U 911E                 F 250 1V M3 4000 3.40 42.8 825   *  18.41      15.10    *  19.14      15.87   *
*                                                                            *                      *                     *
* REFERENCE VALUE                                                            *   5.01      13.22    *  13.46      14.15   *
* DISTRIBUTOR  C43905        AND CARBURETOR  C43533,4                        *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *                      *                     *
* PANTHE PANTHER J.72  W-224-L                                               *                      *                     *
*                                                                            *                      *                     *
* REFERENCE VALUE                                                            *   7.26      13.51    *  16.12      13.95   *
* DISTRIBUTOR  19100-61020  AND CARBURETOR  21100-61072                      *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *                      *                     *
* TOYOTA LAND CRUISER  TE-11                C 258 2V M4 4000 4.11 50.9 948   *   9.13      13.62    *  20.61      13.93   *
*                                                                            *                      *                     *
* REFERENCE VALUE                                                            *   7.26      13.45    *  16.12      13.93   *
* DISTRIBUTOR  19100-61020  AND CARBURETOR  21100-61362                      *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *                      *                     *
* TOYOTA LAND CRUISER  TE-12                C 258 2V M4 4500 4.11 50.9 949   *   9.02      13.47    *  20.17      13.89   *
*                                                                            *                      *                     *
* REFERENCE VALUE                                                            *   7.26      14.32    *  16.12      15.31   *
* DISTRIBUTOR  19100-61020  AND CARBURETOR  21100-61031                      *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *                      *                     *
* TOYOTA LAND CRUISER  TE-9                 F 258 2V M4 4000 4.11 50.9 875   *   9.13      14.43    *  20.61      15.29   *
*                                                                            *                      *                     *
* REFERENCE VALUE                                                            *   7.26      14.48    *  16.12      15.52   *
* DISTRIBUTOR  19100-61020  AND CARBURETOR  21100-61021                      *                      *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                  *                      *                     *
* TOYOTA LAND CRUISER  TE-10                F 258    M4 4500 4.11 50.9 877   *   9.02      14.51    *  20.17      15.47   *
*************************************************************************************************************
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Table 5-23. Fuel-Weighted Calibration Factors
Reference Vehicle 3500/A/3.21, 225 CID

```
**************************************************************************************************************
* PROGRAM VSIMII *   225CID, AUTOMATIC, 3500LB, 44.0N/V          *  RUN ON  10/30/76  AT  11.49.19   PAGE  1 *
**************************************************************************************************************
*                        *                                       *      FTP-URBAN       *    FTP-HIGHWAY      *
*                        *                                       *************************************************
*                        *                                       *   FUEL WEIGHTED      *   FUEL WEIGHTED     *
*                        *                                       *************************************************
*                        *                                       *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL *
*                        *                                       * (DEGREE) *   RATIO   * (DEGREE) *   RATIO  *
**************************************************************************************************************
*                                                                    *                      *                    *
* REFERENCE VALUE                                                    *  17.74     14.29     *  21.51     15.49   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF3227424               *                      *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                      *                    *
* AMC     PACER           D56-19L          C 232 1V A  3500 3.08 41.0 449 *  17.04  14.19   *  20.60     15.52   *
*                                                                    *                      *                    *
* REFERENCE VALUE                                                    *  15.03     15.33     *  20.98     15.80   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF3227422               *                      *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                      *                    *
* AMC     PACER           D56-17L          F 232 1V A  3000 2.53 33.6   1 *  12.42  14.97   *  17.20     15.87   *
* AMC     MATADOR         D58-46K          F 258 1V A  4000 3.54 46.6  14 *  16.89  14.63   *  23.60     15.90   *
*                                                                    *                      *                    *
* REFERENCE VALUE                                                    *  15.03     14.77     *  20.98     15.38   *
* DISTRIBUTOR  3227331       AND CARBURETOR  SF5902377A              *                      *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                      *                    *
* AMC     POST OFFICE     PD76-2           C 232 1V A  3000 3.07 41.3 881 *  14.72  14.78   *  20.71     15.44   *
*                                                                    *                      *                    *
* REFERENCE VALUE                                                    *  14.55     13.66     *  20.73     15.08   *
* DISTRIBUTOR  3227331       AND CARBURETOR  1549                    *                      *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                      *                    *
* AMC                     D54-17K                                    *                      *                    *
*                                                                    *                      *                    *
* REFERENCE VALUE                                                    *  22.05     15.08     *  25.60     16.20   *
* DISTRIBUTOR  3874796-225 AND CARBURETOR  4006644-225               *                      *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                      *                    *
* CHRYSL PLYMOUTH         4024             F 225 1V A  3000 2.76 37.6  48 *  19.63  15.12   *  22.77     16.24   *
*                                                                    *                      *                    *
* REFERENCE VALUE                                                    *  21.02     15.33     *  30.00     16.58   *
* DISTRIBUTOR  3874598-225  AND CARBURETOR  4006503-225              *                      *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                      *                    *
* CHRYSL DODGE            4059             F 225 1V A  4000 3.21 42.4  58 *  20.12  15.40   *  28.36     16.66   *
* CHRYSL DODGE DART       4060             F 225 1V A  3500 2.76 36.9  52 *  18.14  15.46   *  25.62     16.70   *
* CHRYSL PLYMOUTH         4067             F 225 1V A  3500 2.76 37.6  53 *  18.46  15.46   *  25.06     16.70   *
*                                                                    *                      *                    *
* REFERENCE VALUE                                                    *  20.57     14.53     *  29.66     15.79   *
* DISTRIBUTOR  3874598-225  AND CARBURETOR  4006509-225              *                      *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                      *                    *
* CHRYSL VALIANT          4152             C 225 1V A  3500 3.23 44.0 455 *  20.70  14.53   *  29.71     15.80   *
* CHRYSL PLY. FURY        4154             C 225 1V A  4000 3.23 43.1 459 *  20.05  14.32   *  28.45     15.77   *
* CHRYSL PLY. VALIANT     4175             C 225 1V A  3500 2.94 39.3 455 *  18.83  14.59   *  25.32     15.80   *
**************************************************************************************************************
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Table 5-23. Fuel-Weighted Calibration Factors
Reference Vehicle 3500/A/3.21, 225 CID (Concluded)

```
**********************************************************************************************************
* PROGRAM VSIMIT *   225CID, AUTOMATIC, 3500LB, 44.0N/V        *  RUN ON 10/30/76  AT  11.49.19   PAGE  2 *
**********************************************************************************************************
*                        *                                     *      FTP-URBAN      *    FTP-HIGHWAY     *
*                        *                                     ***********************************************
*                        *                                     *   FUEL WEIGHTED     *   FUEL WEIGHTED    *
*                        *                                     ***********************************************
*                        *                                     *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                        *                                     * (DEGREE) *  RATIO   * (DEGREE) *  RATIO   *
**********************************************************************************************************
*                                                                  *                   *                  *
* REFERENCE VALUE                                                  *                   *                  *
* DISTRIBUTOR  3874598-225  AND CARBURETOR  3870958-225            *  19.85     15.62  *  28.62    16.56   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                   *                  *
* CHRYSL DODGE P/U     F146          C 225 1V A  4000 3.21 37.1 886 *  17.01     15.44  *  23.97    16.55   *
*                                                                  *                   *                  *
* REFERENCE VALUE                                                  *                   *                  *
* DISTRIBUTOR  3874598-225  AND CARBURETOR  3870958-225            *  20.67     15.31  *  29.66    16.18   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                   *                  *
* CHRYSL B1 VAN        F143          F 225 1V A  4000 3.55 46.0 774 *  21.20     15.22  *  30.20    16.16   *
* CHRYSL DODGE W1 TRCK F144          F 225 1V A  4500 3.21 40.1 783 *  18.52     15.06  *  26.00    16.14   *
*                                                                  *                   *                  *
* REFERENCE VALUE                                                  *                   *                  *
* DISTRIBUTOR  1110666-14  AND CARBURETOR  17056448-6              *  20.10     15.78  *  27.76    16.63   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                   *                  *
* GMC                  403C          C 231 2V A  4000 2.73 35.1 540 *  16.72     15.52  *  22.50    16.65   *
*                                                                  *                   *                  *
* REFERENCE VALUE                                                  *                   *                  *
* DISTRIBUTOR  1110680-12  AND CARBURETOR  17056149-5              *  19.84     15.34  *  26.72    16.25   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                   *                  *
* GMC    SKYHAWK       471F          F 231 2V A  3500 2.56 37.5 140 *  17.65     15.22  *  23.54    16.29   *
*                                                                  *                   *                  *
* REFERENCE VALUE                                                  *                   *                  *
* DISTRIBUTOR  1110680-11  AND CARBURETOR  17056148-23             *  18.98     15.13  *  26.03    16.28   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                   *                  *
* GMC    CENTURY       416F          F 231 2V A  4000 2.73 35.4 145 *  15.38     14.93  *  21.25    16.30   *
*                                                                  *                   *                  *
* REFERENCE VALUE                                                  *                   *                  *
* DISTRIBUTOR  1110680-13  AND CARBURETOR  17056148-34             *  19.21     15.31  *  26.11    16.42   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                   *                  *
* GMC                  413F                                        *                   *                  *
**********************************************************************************************************
```

Table 5-24. Fuel-Weighted Calibration Factors
Reference Vehicle 3500/M-3/3.21, 225 CID

```
****************************************************************************************************
* PROGRAM VSIMII *    225CID, MANUAL, 3500LB, 44.0N/V              *  RUN ON  10/30/76  AT  11.54.29    PAGE  1 *
****************************************************************************************************
*                          *                                       *       FTP-URBAN        *      FTP-HIGHWAY        *
*                          *                                       **************************************************
*                          *                                       *    FUEL WEIGHTED       *    FUEL WEIGHTED        *
*                          *                                       **************************************************
*                          *                                       *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL   *
*                          *                                       *  (DEGREE) *  RATIO    *  (DEGREE) *  RATIO     *
****************************************************************************************************
*                                                                          *                      *                      *
* REFERENCE VALUE                                                          *   14.88     16.00    *   20.88     16.76    *
* DISTRIBUTOR   3227331       AND CARBURETOR  SF3228747                    *                      *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                      *                      *
* AMC    PACER          D56-15L            F 232 1V M3 3000 3.08 42.5    2 *   14.93     16.02    *   21.16     16.83    *
*                                                                          *                      *                      *
* REFERENCE VALUE                                                          *   14.88     15.51    *   20.88     16.02    *
* DISTRIBUTOR   3227331       AND CARBURETOR  SF3227423                    *                      *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                      *                      *
* AMC    HORNET SW      D50-24L            F 232 1V PO 3500 3.08 42.5    7 *   14.73     15.42    *   20.56     16.06    *
*                                                                          *                      *                      *
* REFERENCE VALUE                                                          *   17.79     15.93    *   21.29     16.69    *
* DISTRIBUTOR   3227331       AND CARBURETOR  SF3228747                    *                      *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                      *                      *
* AMC    HORNET SW      D50-37L            C 232 1V M3 3500 3.08 42.5  450 *   17.61     15.94    *   21.07     16.73    *
*                                                                          *                      *                      *
* REFERENCE VALUE                                                          *   14.88     15.76    *   20.88     16.29    *
* DISTRIBUTOR   3227331       AND CARBURETOR  SF5355705                    *                      *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                      *                      *
* AMC    CJ7 JEEP       D5U-8L             F 258 1V M3 3500 3.54 46.3  768 *   17.10     15.55    *   24.50     16.45    *
*                                                                          *                      *                      *
* REFERENCE VALUE                                                          *   19.87     15.98    *   25.46     16.73    *
* DISTRIBUTOR   3874714-225   AND CARBURETOR  4006602-225                  *                      *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                      *                      *
* CHRYSL PLYMOUTH       4053               F 225 1V M3 3500 3.23 44.6   56 *   20.13     15.98    *   25.32     16.73    *
* CHRYSL PLYMOUTH       4068               F 225 1V M4 4000 2.94 27.2   57 *   13.28     15.70    *   16.22     16.73    *
*                                                                          *                      *                      *
* REFERENCE VALUE                                                          *   22.13     15.28    *   25.52     16.22    *
* DISTRIBUTOR   33747956-225  AND CARBURETOR  4006643 2.2                  *                      *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                      *                      *
* CHRYSL VALIANT        4085               F 225 1V M3 3000 2.94 40.6   49 *   21.00     15.35    *   24.33     16.25    *
* CHRYSL VALIANT        4093               F 225 1V M4 3000 2.94 27.9   50 *   15.51     15.23    *   17.43     16.28    *
*                                                                          *                      *                      *
* REFERENCE VALUE                                                          *   19.65     15.51    *   25.16     16.55    *
* DISTRIBUTOR   3874714-225   AND CARBURETOR  4006607-225                  *                      *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                      *                      *
* CHRYSL DODGE DART     4155               C 225 1V M3 3500 3.23 44.6  457 *   19.90     15.31    *   25.52     16.53    *
*                                                                          *                      *                      *
* REFERENCE VALUE                                                          *   20.19     15.23    *   29.49     16.14    *
* DISTRIBUTOR   3874598-225   AND CARBURETOR  3870951-225                  *                      *                      *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                      *                      *
* CHRYSL B1 VAN         E151               C 225 1V M3 4000 3.55 46.0  997 *   20.70     15.14    *   30.02     16.11    *
****************************************************************************************************
```

Table 5-24. Fuel-Weighted Calibration Factors
Reference Vehicle 3500/M-3/3.21, 225 CID (Concluded)

```
****************************************************************************************************
* PROGRAM VSIMII *    225CID, MANUAL, 3500LB, 44.3N/V              *  RUN ON  [illegible]0/30/76  AT  11.54.09   PAGE  2 *
****************************************************************************************************
*                              *                                  *        FTP-URBAN       *      FTP-HIGHWAY      *
*                              *                                  ****************************************************
*                              *                                  *     FUEL WEIGHTED      *     FUEL WEIGHTED     *
*                              *                                  ****************************************************
*                              *                                  *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL  *
*                              *                                  * (DEGREE)  *   RATIO   * (DEGREE)  *   RATIO   *
****************************************************************************************************
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *                      *                     *
* DISTRIBUTOR  3874598-225  AND CARBURETOR  3870957-225                 *  20.19       15.35   *  29.49       16.28  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* CHRYSL DODGE P/U       E141             F 225 1V M3 4000 3.55 44.3 775 *  20.05       15.23   *  29.01       16.26  *
* CHRYSL DODGE RMCHRGR E201               F 225 1V M4 4500 3.55 44.3 781 *  19.77       15.13   *  28.29       16.23  *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *                      *                     *
* DISTRIBUTOR  1110668C-17  AND CARBURETOR  17056447-19                 *  19.27       15.48   *  25.85       16.41  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     SKYHAWK          405C           C 231 2V M5 3500 2.93 43.1 539 *  19.25       15.41   *  25.84       16.44  *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *                      *                     *
* DISTRIBUTOR  1110668X2661 AND CARBURETOR  17056447-17                 *  19.26       15.35   *  25.81       16.16  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     SKYHAWK          404C1          C 231 2V M4 3500 2.93 43.3 538 *  19.32       15.28   *  25.90       16.19  *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *                      *                     *
* DISTRIBUTOR  1110668C-1   AND CARBURETOR  17056145-3                  *  19.42       15.39   *  26.21       16.17  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     SKYHAWK          415C           F 231 2V M4 3500 2.56 37.5 141 *  17.28       14.97   *  23.09       16.21  *
*                                                                       *                      *                     *
* REFERENCE VALUE                                                       *                      *                     *
* DISTRIBUTOR  1110668C-20  AND CARBURETOR  17056145-22                 *  19.11       15.30   *  25.35       16.15  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                      *                     *
* GMC     SKYLARK          414F-1         F 231 2V M3 4000 3.[illegible]8 41.4 145 *  18.2[illegible]  15.11   *  23.83       16.10  *
****************************************************************************************************
```

Table 5-25. Fuel-Weighted Calibration Factors
Reference Vehicle 3000/M-3/2.92, 140 CID

```
**************************************************************************************************************
* PROGRAM VSIMII *    140CID, MANUAL, 3000LB, 44.0N/V                 *  RUN ON  10/30/76  AT  11.58.30   PAGE  1 *
**************************************************************************************************************
*                          *                                          *     FTP-URBAN      *    FTP-HIGHWAY      *
*                          *                                          *************************************** *
*                          *                                          *   FUEL WEIGHTED    *   FUEL WEIGHTED     *
*                          *                                          *************************************** *
*                          *                                          * ADVANCE * AIR/FUEL * ADVANCE * AIR/FUEL *
*                          *                                          * (DEGREE) *  RATIO  * (DEGREE) *  RATIO  *
**************************************************************************************************************
* REFERENCE VALUE                                                         *                   *                   *
* DISTRIBUTOR  1112862B942  AND CARBURETOR  365832N456                    *                   *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *    9.22   15.36   *   11.78   15.72   *
* GMC     MONZA          815F                                             *                   *                   *
*                                      F 140 2V A  3000 3.42 50.4 193     *   11.05   15.30   *   13.93   15.66   *
* REFERENCE VALUE                                                         *                   *                   *
* DISTRIBUTOR  1112862B927  AND CARBURETOR  366831N613                    *                   *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *    9.21   15.35   *   12.01   15.57   *
* GMC     VEGA PANEL     816F                                             *                   *                   *
*                                      F 140 2V M5 3000 2.93 43.1 192     *    9.24   15.34   *   12.06   15.57   *
* REFERENCE VALUE                                                         *                   *                   *
* DISTRIBUTOR  1112862B939  AND CARBURETOR  366831N618                    *                   *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *    8.52   15.47   *   10.12   15.65   *
* GMC     MONZA          813F                                             *                   *                   *
*                                      F 140 2V M3 3000 3.42 50.4 194     *    9.78   15.54   *   11.74   15.63   *
* REFERENCE VALUE                                                         *                   *                   *
* DISTRIBUTOR  1112862B932  AND CARBURETOR  366831-616                    *                   *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *    8.94   15.23   *   10.97   15.47   *
* GMC     VEGA KB        814F                                             *                   *                   *
*                                      F 140 2V M4 3000 2.53 37.0 181     *    7.90   15.17   *    9.59   15.48   *
* REFERENCE VALUE                                                         *                   *                   *
* DISTRIBUTOR  1112852B933  AND CARBURETOR  366830N455                    *                   *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *    9.26   15.56   *   11.90   15.81   *
* GMC     MONZA          811F                                             *                   *                   *
*                                      F 140 2V A  3000 2.92 43.0 183     *    9.68   15.43   *   12.16   15.76   *
* REFERENCE VALUE                                                         *                   *                   *
* DISTRIBUTOR  1112862B934  AND CARBURETOR  17056027N374                  *                   *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *    8.88   14.98   *   11.20   15.66   *
* GMC     MONZA          845F                                             *                   *                   *
*                                      F 140 2V M3 3000 2.92 43.0 187     *    8.89   14.97   *   11.22   15.66   *
* REFERENCE VALUE                                                         *                   *                   *
* DISTRIBUTOR  1112862B945  AND CARBURETOR  17056027N340                  *                   *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *    9.17   15.03   *   11.55   15.62   *
* GMC     VEGA           844F                                             *                   *                   *
*                                      F 140 1V M4 3000 2.53 37.0 180     *    8.10   14.97   *   10.10   15.63   *
* REFERENCE VALUE                                                         *                   *                   *
* DISTRIBUTOR  1112862B923  AND CARBURETOR  17056026N359                  *                   *                   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *    9.50   15.73   *   12.53   15.84   *
* GMC     MONZA          843F                                             *                   *                   *
*                                      F 140 1V A  3000 2.92 43.0 184     *    9.94   15.60   *   12.80   15.83   *
**************************************************************************************************************
```

Table 5-25. Fuel-Weighted Calibration Factors Reference Vehicle 3000/M-3/2.92, 140 CID (Continued)

```
*******************************************************************************************************
* PROGRAM VSIMII *   140CID, MANUAL, 3000LB, 44.0N/V               *  RUN ON  10/30/76  AT  11.58.30   PAGE  2 *
*******************************************************************************************************
*                                *                                 *      FTP-URBAN      *     FTP-HIGHWAY      *
*                                *                                 ***********************************************
*                                *                                 *   FUEL WEIGHTED     *   FUEL WEIGHTED      *
*                                *                                 ***********************************************
*                                *                                 *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                                *                                 * (DEGREE) *  RATIO   * (DEGREE) *  RATIO   *
*******************************************************************************************************
*                                                                     *                     *                      *
* REFERENCE VALUE                                                     *                     *                      *
* DISTRIBUTOR  1112862B937  AND CARBURETOR  17056022N400              *    8.41     15.55   *   10.43     15.73    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                      *
* GMC    VEGA             841F            F 140 1V A  3000 2.92 43.0 135 *    8.79     15.42   *   10.66     15.68    *
*                                                                     *                     *                      *
* REFERENCE VALUE                                                     *                     *                      *
* DISTRIBUTOR  1112862B924  AND CARBURETOR  365841N550                *    9.12     15.30   *   12.03     15.31    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                      *
* GMC    MONZA            823C            C 140 2V M3 3000 3.42 50.4 573 *   10.46     15.37   *   13.94     15.30    *
*                                                                     *                     *                      *
* REFERENCE VALUE                                                     *                     *                      *
* DISTRIBUTOR  1112862B936  AND CARBURETOR  365834N563                *    8.47     14.50   *   10.53     14.73    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                      *
* GMC    VEGA             821C            C 140 2V A  3000 2.92 43.0 569 *    8.86     14.38   *   10.76     14.69    *
*                                                                     *                     *                      *
* REFERENCE VALUE                                                     *                     *                      *
* DISTRIBUTOR  1112862B938  AND CARBURETOR  365841N509                *    9.14     14.67   *   11.25     15.23    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                      *
* GMC    VEGA             824C            C 140 2V M4 3000 2.53 37.0 566 *    8.07     14.61   *    9.83     15.24    *
*                                                                     *                     *                      *
* REFERENCE VALUE                                                     *                     *                      *
* DISTRIBUTOR  1112862B931  AND CARBURETOR  366840N740                *    9.59     14.76   *   12.44     14.90    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                      *
* GMC    MONZA            825C            C 140 2V A  3000 2.92 43.0 568 *   10.03     14.63   *   12.71     14.86    *
*                                                                     *                     *                      *
* REFERENCE VALUE                                                     *                     *                      *
* DISTRIBUTOR  1112862B930  AND CARBURETOR  366841N506                *    9.37     15.36   *   11.65     15.41    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                      *
* GMC    VEGA PANEL       826C            C 140 2V M5 3000 2.93 43.1 572 *    9.40     15.36   *   11.69     15.41    *
*                                                                     *                     *                      *
* REFERENCE VALUE                                                     *                     *                      *
* DISTRIBUTOR  TKC1689        AND CARBURETOR  RKC 769                 *    6.24     13.71   *   11.00     14.08    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                      *
* TRIUMP TR7              85F             C 122 2V M4 275. 3.70 55.2 713 *    7.59     14.11   *   12.94     13.97    *
*                                                                     *                     *                      *
* REFERENCE VALUE                                                     *                     *                      *
* DISTRIBUTOR  19100-45062  AND CARBURETOR  21100-45100               *    6.69     14.38   *   12.91     14.61    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES           *                     *                      *
* TOYOTA MARK II          CF-9            C 155 2V A  3000 3.91 55.5 737 *    9.29     14.13   *   17.88     14.64    *
* TOYOTA MARK II WGN      CF-10           C 155 2V M4 3000 3.91 55.5 738 *    8.90     14.20   *   17.53     14.68    *
*******************************************************************************************************
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Table 5-25. Fuel-Weighted Calibration Factors
Reference Vehicle 3000/M-3/2.92, 140 CID (Continued)

```
*****************************************************************************************************************
* PROGRAM VSIMIT *   140CID, MANUAL, 3000LB, 44.0N/V                      *  RUN ON  10/30/76  AT  11.58.30   PAGE  3 *
*****************************************************************************************************************
*                            *                                            *      FTP-URBAN      *    FTP-HIGHWAY      *
*                            *                                            ***********************************************
*                            *                                            *    FUEL WEIGHTED    *    FUEL WEIGHTED    *
*                            *                                            ***********************************************
*                            *                                            * ADVANCE * AIR/FUEL * ADVANCE * AIR/FUEL *
*                            *                                            * (DEGREE) *  RATIO  * (DEGREE) *  RATIO   *
*****************************************************************************************************************
*                                                                           *                     *                     *
* REFERENCE VALUE                                                           *                     *                     *
* DISTRIBUTOR  0231184001   AND CARBURETOR  FI438420004,                    *    6.21     15.47   *   14.76     15.59   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                     *                     *
* PORSCH 911S          FC1            F 164 FI M5 2750 3.88 43.3 357         *    6.92     15.15   *   16.70     15.76   *
* PORSCH 911S          FC2            C 164 FI M5 2750 3.88 43.3 691         *    6.92     15.15   *   16.70     15.76   *
* PORSCH 911S          FC3            C 164 FI SA 2750 3.38 44.4 690         *    7.37     15.04   *   17.43     15.71   *
*                                                                           *                     *                     *
* REFERENCE VALUE                                                           *                     *                     *
* DISTRIBUTOR  0237301001   AND CARBURETOR  FI438120024,                    *    2.17     13.28   *    5.33     13.21   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                     *                     *
* PORSCH TC CARRERA    FC4            C 183 FI M4 3000 4.22 38.1 693         *    2.31     12.06   *    5.71     13.45   *
*                                                                           *                     *                     *
* REFERENCE VALUE                                                           *                     *                     *
* DISTRIBUTOR  TKC 0517      AND CARBURETOR  RKC1797/8/9                     *    6.89     13.90   *   13.32     14.15   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                     *                     *
* TRIUMP TR6          CF16504/4       F 152 2V M4 2750 3.70 48.3 387         *    8.06     13.82   *   15.36     14.23   *
*                                                                           *                     *                     *
* REFERENCE VALUE                                                           *                     *                     *
* DISTRIBUTOR  TKC 1234      AND CARBURETOR  RKC 0623                        *    4.30     14.81   *    8.50     15.06   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                     *                     *
* TRIUMP TR7           R42            F 122 2V M4 2750 3.70 55.9 386         *    5.34     15.25   *   10.11     14.95   *
* TRIUMP TR7           R52            F 122 2V A  2750 3.45 50.3 385         *    4.80     15.08   *    9.35     14.91   *
*                                                                           *                     *                     *
* REFERENCE VALUE                                                           *                     *                     *
* DISTRIBUTOR  19100-38011  AND CARBURETOR  21100-3809,                     *   12.25     14.34   *   17.91     14.71   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                     *                     *
* TOYOTA HILUX PU-2    TF-5           C 133 2V M5 3500 4.35 51.3 945         *   13.87     14.50   *   20.44     14.65   *
* TOYOTA HILUX PU      TF-7           C 133 2V M4 2750 4.11 55.2 942         *   14.90     14.60   *   22.19     14.66   *
* TOYOTA HILUX CAB     TF-8           C 133 2V M4 3500 4.11 53.5 947         *   14.15     14.40   *   20.66     14.62   *
*                                                                           *                     *                     *
* REFERENCE VALUE                                                           *                     *                     *
* DISTRIBUTOR  19100-38011  AND CARBURETOR  21100-38100                     *   12.25     15.18   *   17.91     15.45   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                     *                     *
* TOYOTA HILUX CAB     TF-6           C 133 2V A  3500 4.11 53.5 946         *   14.77     15.13   *   21.07     15.32   *
*                                                                           *                     *                     *
* REFERENCE VALUE                                                           *                     *                     *
* DISTRIBUTOR  19100-38011  AND CARBURETOR  21100-38061                     *   12.25     15.73   *   17.91     15.99   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                 *                     *                     *
* TOYOTA HILUX CAB     TF-2           F 133 2V A  3500 4.11 53.5 873         *   14.77     15.68   *   21.07     15.85   *
*****************************************************************************************************************
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Table 5-25. Fuel-Weighted Calibration Factors
Reference Vehicle 3000/M-3/2.92, 140 CID (Continued)

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****************************************************************************************************************
* PROGRAM VSIMII *   140CID, MANUAL, 3000LB, 44.0N/V                  * RUN ON  10/30/76  AT  11.58.30   PAGE  4 *
****************************************************************************************************************
*                             *                                       *      FTP-URBAN      *     FTP-HIGHWAY     *
*                             *                                       *************************************************
*                             *                                       *    FUEL WEIGHTED    *    FUEL WEIGHTED    *
*                             *                                       *************************************************
*                             *                                       * ADVANCE  * AIR/FUEL * ADVANCE  * AIR/FUEL *
*                             *                                       * (DEGREE) *  RATIO   * (DEGREE) *  RATIO   *
****************************************************************************************************************
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  19100-38011  AND CARBURETOR  21100-38081                *  12.25      14.34   *  17.91      14.71   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* TOYOTA CELICA LB GT  CE-5             C 133 2V M5 3000 3.73 45.1 735 *  12.41      14.45   *  18.15      14.66   *
* TOYOTA CORONA HT     CE-7             C 133 2V M4 3000 3.73 52.4 733 *  14.12      14.52   *  20.35      14.65   *
* TOYOTA CORONA WGN    CE-8             C 133 2V M5 3000 3.72 44.7 732 *  12.32      14.45   *  18.01      14.66   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  19100-38011  AND CARBURETOR  21100-38021                *  12.25      15.18   *  17.91      15.45   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* TOYOTA CELICA LB ST  CE-6             C 133 2V A  3000 3.91 55.0 736 *  15.34      15.27   *  22.24      15.34   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  19100-45091  AND CARBURETOR  21100-45100                *  13.49      14.34   *  19.68      14.54   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* TOYOTA MARK II       FE-10            F 156 2V A  3000 3.91 55.5 414 *  18.73      14.10   *  27.26      14.[illegible]   *
* TOYOTA MARK II       FE-12            F 156 2V A  3000 4.11 57.6 415 *  19.35      14.12   *  28.24      14.[illegible]   *
* TOYOTA MARK II       FE-11            F 156 2V M4 3000 3.91 55.5 413 *  17.94      14.21   *  25.73      14.61   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  19100-38011  AND CARBURETOR  21100-38011                *  12.25      15.18   *  17.91      15.45   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* TOYOTA CELICA LB GT  FE-5             F 133 2V M5 3000 3.73 45.1 411 *  12.41      15.33   *  18.15      15.41   *
* TOYOTA CORONA WGN    FE-7             F 133 2V M4 3000 3.72 52.8 407 *  14.22      15.37   *  21.00      15.39   *
* TOYOTA CORONA ES     FE-8             F 133 2V M5 3000 3.73 52.8 409 *  14.22      15.37   *  21.00      15.39   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  19100-38011  AND CARBURETOR  21100-38031                *   7.63      15.73   *   6.69      15.99   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* TOYOTA CELICA LB ST  FE-6             F 133 2V A  3000 3.91 55.0 412 *   9.57      15.82   *   8.34      15.88   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  D6F4-03       AND CARBURETOR  FI LJ-02                  *   7.77      15.85   *  13.31      19.02   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* NISSAN 280Z          F494             C 168 FI A  3000 3.55 49.6 591 *  10.46      18.25   *  19.10      19.17   *
* NISSAN 280Z          F496             C 168 FI M4 3000 3.55 49.6 592 *  10.52      18.43   *  17.75      19.22   *
*                                                                      *                     *                     *
* REFERENCE VALUE                                                      *                     *                     *
* DISTRIBUTOR  D6F4-01       AND CARBURETOR  FI LJ-02                  *   7.95      13.35   *  13.55      19.02   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                     *
* NISSAN 280Z          F497             F 168 FI M4 3000 3.55 49.6 348 *  10.04      18.40   *  17.55      19.22   *
****************************************************************************************************************
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Table 5-25. Fuel-Weighted Calibration Factors
Reference Vehicle 3000/M-3/2.92, 140 CID (Concluded)

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*****************************************************************************************************
* PROGRAM VSIMII *    140CID, MANUAL, 3000LB, 44.0N/V                * RUN ON  10/30/76  AT  11.58.30    PAGE  5 *
*****************************************************************************************************
*                               *                                    *        FTP-URBAN       *       FTP-HIGHWAY      *
*                               *                                    ****************************************************
*                               *                                    *     FUEL WEIGHTED      *     FUEL WEIGHTED      *
*                               *                                    ****************************************************
*                               *                                    *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL  *
*                               *                                    *  (DEGREE) *   RATIO   *  (DEGREE) *   RATIO   *
*****************************************************************************************************
*                                                                         *                        *                        *
* REFERENCE VALUE                                                         *                        *                        *
* DISTRIBUTOR  06F4-02        AND CARBURETOR  FI LJ-02                    *    6.44      18.86     *   12.72      19.02     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                        *                        *
* NISSAN 280Z           F495            F 168 FI A  3000 3.55 49.6 347    *    8.53      18.25     *   16.67      19.17     *
*                                                                         *                        *                        *
* REFERENCE VALUE                                                         *                        *                        *
* DISTRIBUTOR  0011589801   AND CARBURETOR  0011700604                    *   11.19      16.87     *   15.99      17.13     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                        *                        *
* MERCED M-B 115        115V607 L40C    C 141 1V A  3500 3.92 55.5 627    *   14.40      16.70     *   21.42      17.03     *
* MERCED M-B 115        115V512         F 141 1V A  3500 3.92 54.3 298    *   14.13      16.69     *   21.32      17.03     *
*                                                                         *                        *                        *
* REFERENCE VALUE                                                         *                        *                        *
* DISTRIBUTOR  0021580401   AND CARBURETOR  DB00107005                    *    6.37      12.50     *   13.38      13.48     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                        *                        *
* MERCED M-B 114        114V628         C 168 4V A  4000 3.69 51.9 629    *    8.42      11.91     *   17.26      13.54     *
* MERCED M-B 115        115V629         C 168 4V A  4000 3.69 51.7 628    *    8.42      11.91     *   17.20      13.54     *
*                                                                         *                        *                        *
* REFERENCE VALUE                                                         *                        *                        *
* DISTRIBUTOR  JFU231170122 AND CARBURETOR  FI                            *    4.80      14.26     *    7.98      14.74     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                        *                        *
* SAAB    SAAB 99       99-H39          F 121 FI A  3000 3.89 53.5 370    *    5.58      14.50     *    9.13      14.56     *
* SAAB    SAAB 99       99-H40          F 121 FI M4 3000 3.89 52.9 371    *    5.29      14.61     *    8.86      14.61     *
* SAAB    SAAB 99       99-H42          F 121 FI M4 3000 3.89 52.9 372    *    5.29      14.61     *    8.86      14.61     *
* SAAB    SAAB 99       99-H44          C 121 FI A  3000 3.89 53.5 700    *    5.58      14.50     *    9.13      14.56     *
* SAAB    SAAB 99       99-H45          C 121 FI M4 3000 3.89 52.9 701    *    5.29      14.61     *    8.86      14.61     *
*                                                                         *                        *                        *
* REFERENCE VALUE                                                         *                        *                        *
* DISTRIBUTOR  M74            AND CARBURETOR  32.34BICSA                  *    3.42      13.54     *    9.98      14.26     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                        *                        *
* PEUGEO 504 SL         262             C 120 2V M4 3500 3.89 53.8 686    *    3.75      13.78     *   10.88      14.10     *
* PEUGEO 504 SL         263             F 120 2V A  3500 3.89 53.8 351    *    3.91      13.67     *   11.10      14.06     *
* PEUGEO 504 SL         264             F 120 2V M4 3500 3.89 53.8 352    *    3.75      13.78     *   10.88      14.10     *
* PEUGEO 504 SL         272             C 120 2V A  3500 3.89 53.8 595    *    3.91      13.67     *   11.10      14.06     *
* PEUGEO 504 WGN        276             C 120 2V A  3500 3.89 53.8 596    *    3.91      13.67     *   11.10      14.06     *
* PEUGEO 504 WGN        279             F 120 2V A  3500 4.11 55.6 353    *    4.03      13.49     *   11.45      14.06     *
*                                                                         *                        *                        *
* REFERENCE VALUE                                                         *                        *                        *
* DISTRIBUTOR  19100-38011  AND CARBURETOR  21100-38041                   *   12.25      15.18     *   17.91      15.45     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                        *                        *
* TOYOTA HILUX P.U.     TF-1            F 133 2V M4 2750 4.11 55.2 368    *   14.90      15.46     *   22.19      15.40     *
* TOYOTA HILUX P.U.     TF-3            F 133 2V M5 2750 4.38 51.3 371    *   13.98      15.42     *   20.73      15.41     *
* TOYOTA HILUX CAB      TF-4            F 133 2V M4 3500 4.11 53.3 372    *   14.15      15.25     *   20.66      15.36     *
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Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID

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*****************************************************************************************************************
* PROGRAM VSIMII *     98CID, MANUAL, 2500LB, 55.5N/V                 *  RUN ON  10/30/76  AT  12.01.21   PAGE  1 *
***********************************************************************************************************
*                                   *                                 *       FTP-URBAN      *     FTP-HIGHWAY     *
*                                   *                                 ************************************************
*                                   *                                 *    FUEL WEIGHTED     *   FUEL WEIGHTED     *
*                                   *                                 ************************************************
*                                   *                                 *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL *
*                                   *                                 * (DEGREE) *   RATIO   * (DEGREE) *   RATIO  *
*****************************************************************************************************************
*                                                                         *                     *                     *
* REFERENCE VALUE                                                         *   17.73     15.26   *   18.01     15.50   *
* DISTRIBUTOR  1110654G224  AND CARBURETOR  17056330N357                  *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                     *                     *
* GMC     CHEVETTE       181C              C  85 1V A  2250 4.11 62.7 556 *   18.92     15.53   *   18.90     15.35   *
*                                                                         *                     *                     *
* REFERENCE VALUE                                                         *   14.64     15.85   *   14.76     16.01   *
* DISTRIBUTOR  1110655G166  AND CARBURETOR  17056331N356                  *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                     *                     *
* GMC     CHEVETTE       183C              C  85 1V M4 2250 4.11 62.7 557 *   14.96     16.26   *   15.18     15.90   *
*                                                                         *                     *                     *
* REFERENCE VALUE                                                         *   17.84     15.17   *   15.62     16.36   *
* DISTRIBUTOR  1110659G154  AND CARBURETOR  17056031N173                  *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                     *                     *
* GMC     CHEVETTE       124F              F  85 1V M4 2250 4.11 62.7 167 *   18.27     16.60   *   15.06     16.25   *
*                                                                         *                     *                     *
* REFERENCE VALUE                                                         *   17.74     16.04   *   18.12     16.37   *
* DISTRIBUTOR  1110654C229  AND CARBURETOR  17056030N809                  *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                     *                     *
* GMC     CHEVETTE       121F              F  85 1V A  2250 4.11 62.7 166 *   18.92     16.33   *   19.01     16.21   *
*                                                                         *                     *                     *
* REFERENCE VALUE                                                         *   19.47     16.13   *   17.21     16.44   *
* DISTRIBUTOR  1110657G125  AND CARBURETOR  17056335N285                  *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                     *                     *
* GMC     CHEVETTE       184C              C  98 1V M4 2250 4.11 62.7 560 *   21.53     16.24   *   19.30     16.45   *
*                                                                         *                     *                     *
* REFERENCE VALUE                                                         *   18.45     15.74   *   16.21     15.86   *
* DISTRIBUTOR  1110659G102  AND CARBURETOR  17056334N286                  *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                     *                     *
* GMC     CHEVETTE       182C              C  98 1V A  2250 4.11 62.7 559 *   21.32     15.73   *   18.55     15.82   *
*                                                                         *                     *                     *
* REFERENCE VALUE                                                         *   19.73     16.30   *   17.24     16.26   *
* DISTRIBUTOR  1110657G123  AND CARBURETOR  17056035N187                  *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                     *                     *
* GMC     CHEVETTE       122F              F  98 1V M4 2250 3.70 55.5 169 *   20.02     16.37   *   17.07     16.28   *
*                                                                         *                     *                     *
* REFERENCE VALUE                                                         *   18.82     16.18   *   16.17     16.39   *
* DISTRIBUTOR  1110659G155  AND CARBURETOR  17056034N185                  *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES               *                     *                     *
* GMC     CHEVETTE       122E              F  98 1V A  2250 4.11 62.7 170 *   21.74     16.15   *   18.50     16.36   *
*****************************************************************************************************************
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Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

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**************************************************************************************************************************
* PROGRAM VSIMII *     98CID, MANUAL, 2500LB, 56.5N/V                      *  RUN ON  10/30/76  AT  12.01.21    PAGE  2 *
**************************************************************************************************************************
*                              *                                            *       FTP-URBAN       *     FTP-HIGHWAY      *
*                              *                                            ***************************************************
*                              *                                            *    FUEL WEIGHTED      *    FUEL WEIGHTED     *
*                              *                                            ***************************************************
*                              *                                            * ADVANCE * AIR/FUEL    * ADVANCE * AIR/FUEL   *
*                              *                                            * (DEGREE) *  RATIO     * (DEGREE) *  RATIO    *
**************************************************************************************************************************
*                                                                       *                        *                        *
* REFERENCE VALUE                                                       *                        *                        *
* DISTRIBUTOR  0231176046   AND CARBURETOR  FI0438040006                *   17.46      15.64     *   20.78      15.64     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                        *                        *
* AUDI    FOX           8252000015                                      *                        *                        *
* VW      DASHER        8252000015                                      *                        *                        *
*                                                                       *                        *                        *
* REFERENCE VALUE                                                       *                        *                        *
* DISTRIBUTOR  0231176057   AND CARBURETOR  FI0438040006                *   16.87      15.64     *   20.52      15.64     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                        *                        *
* AUDI    FOX           IN-JM2          C  97 FI A  2500 3.91 60.0 759  *   18.47      15.56     *   22.03      15.58     *
* VW      DASHER        IN-JM2          C  97 FI A  2500 3.91 60.0 750  *   18.47      15.56     *   22.03      15.58     *
* AUDI    FOX WGN       IN-JM49         C  97 FI M4 2500 4.11 60.0 760  *   17.69      15.68     *   21.60      15.63     *
* VW      DASHER WGN    IN-JM49         C  97 FI M4 2500 4.11 60.0 751  *   17.69      15.68     *   21.60      15.63     *
* AUDI    FOX WGN       IN-AA42         F  97 FI A  2500 3.91 60.0 438  *   18.47      15.56     *   22.03      15.58     *
* VW      DASHER WGN    IN-AA42         F  97 FI A  2500 3.91 60.0 429  *   18.47      15.56     *   22.03      15.58     *
* AUDI    FOX           IN-JM35         F  97 FI M4 2500 4.11 60.0 439  *   17.69      15.68     *   21.60      15.63     *
* VW      DASHER        IN-JM35         F  97 FI M4 2500 4.11 60.0 430  *   17.59      15.58     *   21.50      15.63     *
* AUDI    FOX           IN-AA41                                         *                        *                        *
*                                                                       *                        *                        *
* REFERENCE VALUE                                                       *                        *                        *
* DISTRIBUTOR  0231176032   AND CARBURETOR  FI0438040005                *   19.59      15.79     *   25.56      15.88     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                        *                        *
* AUDI    100 LS        IN-JH46         C 114 FI M4 3000 4.11 58.9 762  *   21.82      15.28     *   28.34      15.99     *
* AUDI    100 LS        IN-JF86         C 114 FI A  3000 3.91 57.0 761  *   22.15      15.15     *   28.36      15.95     *
* AUDI    100 LS        IN-JF98         F 114 FI A  3000 3.91 57.0 440  *   22.15      15.15     *   28.36      15.95     *
* AUDI    100 LS        IN-JH24         F 114 FI M4 3000 4.11 58.9 441  *   21.82      15.28     *   28.34      15.99     *
*                                                                       *                        *                        *
* REFERENCE VALUE                                                       *                        *                        *
* DISTRIBUTOR  0559052058,F AND CARBURETOR  C55129021                   *   16.42      14.63     *   19.93      14.94     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                        *                        *
* VW      RABBIT        WOB-VH18        F  97 2V M4 2250 3.90 57.6 426  *   16.79      14.72     *   20.54      14.95     *
* VW      RABBIT        WOB-VH28        C  97 2V M4 2250 3.90 57.6 748  *   16.79      14.72     *   20.54      14.95     *
* VW      RABBIT        WOB-VX92        C  97 2V A  2250 3.76 57.1 421  *   17.43      14.60     *   20.79      14.91     *
* VW      RABBIT        WOB-VS62        F  97 2V A  2250 3.76 57.1 742  *   17.43      14.60     *   20.79      14.91     *
*                                                                       *                        *                        *
* REFERENCE VALUE                                                       *                        *                        *
* DISTRIBUTOR  0003/3./4    AND CARBURETOR  0003/2                      *   16.19      15.83     *   14.42      15.38     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                        *                        *
* HONDA   CIVIC         SRC-3300001     F  76 2V M4 2000 4.93 64.7 320  *   16.13      16.55     *   14.54      15.21     *
**************************************************************************************************************************
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Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

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**************************************************************************************************************
* PROGRAM VSIMII *    98CID, MANUAL, 2500LB, 56.5N/V                  *  RUN ON  10/30/76  AT  12.01.21   PAGE  3 *
**************************************************************************************************************
*                     *                                               *       FTP-URBAN       *      FTP-HIGHWAY      *
*                     *                                               *************************************************
*                     *                                               *     FUEL WEIGHTED     *     FUEL WEIGHTED     *
*                     *                                               *************************************************
*                     *                                               *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL  *
*                     *                                               * (DEGREE)  *  RATIO    * (DEGREE)  *  RATIO    *
**************************************************************************************************************
*                                                                      *                       *                       *
* REFERENCE VALUE                                                      *                       *                       *
* DISTRIBUTOR  0231176059   AND CARBURETOR  1261105.1                  *   28.37      15.16    *   33.35      15.33    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                       *                       *
* BMW    2002             2367250       C 121 2V M4 2750 3.64 54.0 621 *   30.70      14.55    *   36.17      15.52    *
*                                                                      *                       *                       *
* REFERENCE VALUE                                                      *                       *                       *
* DISTRIBUTOR  0231170164   AND CARBURETOR  1261105.1                  *   34.75      15.16    *   36.40      15.33    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                       *                       *
* BMW    2002A            2381550       C 121 2V A  2750 3.64 54.0 620 *   39.34      14.45    *   40.28      15.48    *
*                                                                      *                       *                       *
* REFERENCE VALUE                                                      *                       *                       *
* DISTRIBUTOR  0500B        AND CARBURETOR  0500B                      *   10.48      13.99    *   14.00      14.01    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                       *                       *
* LOTUS  LOTUS ELITE      0500B         C 120 2V M5 2750 3.73 43.7 668 *    9.49      13.39    *   12.48      14.19    *
*                                                                      *                       *                       *
* REFERENCE VALUE                                                      *                       *                       *
* DISTRIBUTOR  4G5-C        AND CARBURETOR  4G5-C                      *     .02      15.45    *     .03      17.04    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                       *                       *
* MITSUB COLT WGN         B208          C 122 2V M5 2750 3.89 58.0 710 *     .02      15.75    *     .03      17.28    *
* MITSUB COLT             B215          C 122 2V A  2750 3.54 54.2 708 *     .03      15.66    *     .04      17.22    *
*                                                                      *                       *                       *
* REFERENCE VALUE                                                      *                       *                       *
* DISTRIBUTOR  4G3-C        AND CARBURETOR  4G3-C,4G3-F                *   12.88      16.39    *   15.57      16.89    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                       *                       *
* MITSUB COLT             B103          C  98 2V A  2750 3.89 59.4 705 *   13.92      16.18    *   16.39      16.82    *
* MITSUB COLT             B110          C  98 2V M4 2750 3.89 58.4 705 *   13.13      15.30    *   15.82      16.87    *
* MITSUB COLT             B112          C  98 2V M5 2750 4.22 54.1 707 *   12.32      16.27    *   14.75      16.88    *
* MITSUB ARROW            C107          C  98 2V A  2500 3.89 60.3 703 *   14.24      16.27    *   16.90      16.84    *
* MITSUB ARROW            C116          C  98 2V M4 2500 3.89 58.4 702 *   13.27      16.38    *   15.09      16.89    *
*                                                                      *                       *                       *
* REFERENCE VALUE                                                      *                       *                       *
* DISTRIBUTOR  4G3-F(M)     AND CARBURETOR  4G3-F,4G3-C                *   12.88      16.38    *   15.57      16.89    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                       *                       *
* MITSUB COLT             B106          F  98 2V M4 2750 3.89 58.4 377 *   13.15      16.30    *   15.82      16.87    *
* MITSUB COLT             B108          F  98 2V M5 2500 4.22 53.3 374 *   12.29      16.35    *   14.80      16.90    *
* MITSUB ARROW            C114          F  98 2V M4 2500 3.89 58.4 373 *   13.27      16.38    *   16.09      16.89    *
*                                                                      *                       *                       *
* REFERENCE VALUE                                                      *                       *                       *
* DISTRIBUTOR  4G3-F(A)     AND CARBURETOR  4G3-F,4G3-C                *   12.83      16.38    *   15.57      16.89    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                       *                       *
* MITSUB COLT             B101          F  98 2V A  2750 3.89 60.3 376 *   14.10      16.19    *   15.62      16.82    *
* MITSUB ARROW            C105          F  98 2V A  2500 3.89 60.3 374 *   14.24      16.27    *   16.90      16.84    *
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Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

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*********************************************************************************************************************
* PROGRAM VSIMII *     98CID, MANUAL, 2500LB, 56.5N/V                 *  RUN ON  10/30/76   AT   12.01.21    PAGE  4 *
*********************************************************************************************************************
*                           *                                         *         FTP-URBAN        *     FTP-HIGHWAY     *
*                           *                                         ***********************************************
*                           *                                         *       FUEL WEIGHTED      *    FUEL WEIGHTED    *
*                           *                                         ***********************************************
*                           *                                         *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL *
*                           *                                         * (DEGREE)  *   RATIO   * (DEGREE)  *   RATIO  *
*********************************************************************************************************************
*                                                                    *                        *                      *
* REFERENCE VALUE                                                    *                        *                      *
* DISTRIBUTOR  4G5-F          AND CARBURETOR  4G5-F                  *   10.70      16.18     *   13.93      16.68   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                        *                      *
* MITSUB COLT          8211          F 122 2V A  2750 3.54 54.2 380  *   12.22      15.39     *   15.54      16.86   *
* MITSUB COLT          8213          F 122 2V A  2750 3.54 54.9 379  *   12.35      15.40     *   15.73      16.85   *
* MITSUB ARROW         C206          F 122 2V M5 2750 3.89 49.3 381  *   10.81      15.48     *   13.99      16.91   *
*                                                                    *                        *                      *
* REFERENCE VALUE                                                    *                        *                      *
* DISTRIBUTOR  329875102      AND CARBURETOR  329978100              *   13.19      16.50     *   17.06      16.66   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                        *                      *
* FUJII   SUBARU       6FF-C         F  83 2V M4 2250 4.13 66.0 443  *   13.91      17.07     *   18.08      16.52   *
* FUJII   SUBARU WGN   6FF-D         F  97 2V A  2500 3.89 62.0 448  *   14.86      16.48     *   18.81      16.59   *
* FUJII   SUBARU WGN   6FF-E         F  83 2V M5 2250 4.13 60.0 442  *   12.82      17.02     *   16.56      16.53   *
* FUJII   SUBARU WGN   6FF-F         F  83 2V M4 2250 4.13 66.0 445  *   13.78      16.98     *   17.78      16.50   *
* FUJII   SUBARU       6CF-G         C  83 2V M4 2250 4.13 66.0 763  *   13.91      17.37     *   18.08      16.52   *
* FUJII   SUBARU WGN   6CF-H         C  97 2V A  2500 3.89 62.0 766  *   14.86      15.48     *   18.81      16.59   *
* FUJII   SUBARU WGN   6CF-J         C  83 2V M4 2250 4.13 66.0 765  *   13.78      15.98     *   17.78      16.50   *
*                                                                    *                        *                      *
* REFERENCE VALUE                                                    *                        *                      *
* DISTRIBUTOR  M402P2,HUS     AND CARBURETOR  32DATRA1/100           *   13.73      16.01     *   17.08      16.30   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                        *                      *
* FIAT    128          1842465       F  79 2V M4 2500 4.42 72.0 305  *   15.07      16.55     *   18.81      16.10   *
* FIAT    128          0193126       F  79 2V M4 2500 4.42 72.0 307  *   15.07      16.56     *   18.81      16.10   *
*                                                                    *                        *                      *
* REFERENCE VALUE                                                    *                        *                      *
* DISTRIBUTOR  M402P2P2,HUS   AND CARBURETOR  32DATRA1/100           *   13.73      16.01     *   17.08      16.30   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                        *                      *
* FIAT    X1/9         0026569       C  79 2V M4 2500 4.42 66.0 636  *   13.98      16.52     *   17.36      16.11   *
* FIAT    128          1869747       C  79 2V M4 2500 4.42 72.0 637  *   15.07      16.56     *   18.81      16.10   *
*                                                                    *                        *                      *
* REFERENCE VALUE                                                    *                        *                      *
* DISTRIBUTOR  SBD-3300003    AND CARBURETOR  SBD-3300003            *   18.49      15.93     *   19.14      15.65   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                        *                      *
* HONDA   CIVIC        SBD-3300003   F  76 2V SA 2000 4.12 72.5 318  *   21.29      16.53     *   21.39      15.41   *
*                                                                    *                        *                      *
* REFERENCE VALUE                                                    *                        *                      *
* DISTRIBUTOR  TKC 1224       AND CARBURETOR  RKC 3725               *   12.05      15.25     *   13.75      16.21   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                        *                      *
* TRIUMP SPITFIRE      FM48890       C  91 1V M4 2250 3.89 59.9 711  *   12.30      15.49     *   14.13      16.16   *
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Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

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*****************************************************************************************************
* PROGRAM VSIMII *    98CID, MANUAL, 2500LB, 55.5N/V                *  RUN ON 10/30/76  AT  12.01.21   PAGE  5 *
*********************************************************************************************************
*                                    *                              *      FTP-URBAN      *    FTP-HIGHWAY      *
*                                    *                              *******************************************
*                                    *                              *    FUEL WEIGHTED    *   FUEL WEIGHTED     *
*                                    *                              *******************************************
*                                    *                              *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                                    *                              * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
*********************************************************************************************************
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *   12.05    15.16   *   13.75    16.29   *
* DISTRIBUTOR  TKC 1224      AND CARBURETOR  CHA 511                     *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* TRIUMP MG MIDGET      ADC47-1975-12  C  91 1V M4 2250 3.91 60.8 712    *   12.45    15.41   *   14.32    16.24   *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *    9.83    16.39   *   11.96    17.68   *
* DISTRIBUTOR  TKC 2755      AND CARBURETOR  RKC 0771                    *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* TRIUMP SPITFIRE       FM2853374      F  91 1V M4 2000 3.89 59.9 383    *   10.13    16.72   *   12.49    17.63   *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *    9.83    15.17   *   11.76    16.30   *
* DISTRIBUTOR  TKC 2755      AND CARBURETOR  CHA 327                     *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* TRIUMP MG MIDGET      [illegible]    F  91 1V M4 2000 3.91 60.8 384    *   10.25    15.50   *   12.66    16.27   *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *   14.24    16.33   *   19.21    17.98   *
* DISTRIBUTOR  LUCAS 45DE4   AND CARBURETOR  R/C                         *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* AUSTIN MGB            [illegible]    F 110 1V M5 2500 3.91 55.5 287    *  [illegible] 16.23 *   20.40    18.11   *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *   17.47    15.11   *   19.14    15.40   *
* DISTRIBUTOR  19100-26121  AND CARBURETOR  21100-26371.                 *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* TOYOTA COROLLA        CF-1           C  97 2V M4 2500 4.10 60.5 727    *   18.53    15.16   *   20.39    15.45   *
* TOYOTA COROLLA        CF-2           C  97 2V A  2500 4.10 60.8 725    *   19.34    15.04   *   20.80    15.41   *
* TOYOTA COROLLA SR5    CF-3           C  97 2V M5 2500 4.30 57.0 730    *   17.[illegible] 15.12 * 18.31    15.40   *
* TOYOTA COROLLA WGN    CF-4           C  97 2V A  2500 4.10 60.8 726    *   19.34    15.04   *   20.80    15.41   *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *   22.34    15.45   *   24.03    15.93   *
* DISTRIBUTOR  19100-26110  AND CARBURETOR  21100-26352                  *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* TOYOTA COROLLA        FF-1           F  97 2V M4 2500 4.10 60.3 432    *   23.70    15.49   *   25.36    15.72   *
* TOYOTA COROLLA        FF-2           F  97 2V A  2500 4.10 60.3 451    *   24.74    15.37   *   25.11    15.87   *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *   11.35    16.41   *   12.88    16.30   *
* DISTRIBUTOR  D4A4-05        AND CARBURETOR  DCH340-49,47               *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* NISSAN PICK-UP        K428           F 119 2V A  2750 4.11 57.4 454    *   13.39    15.70   *   14.39    16.43   *
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Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

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**************************************************************************************************************
* PROGRAM VSIMIT *    98CID, MANUAL, 2500LB, 56.5N/V                 *  RUN ON  10/30/76  AT  12.01.21   PAGE  6 *
**************************************************************************************************************
*                            *                                       *      FTP-URBAN      *     FTP-HIGHWAY      *
*                            *                                       ****************************************
*                            *                                       *   FUEL WEIGHTED     *    FUEL WEIGHTED     *
*                            *                                       ****************************************
*                            *                                       *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                            *                                       * (DEGREE) *   RATIO  * (DEGREE) *   RATIO  *
**************************************************************************************************************
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *                    *                    *
* DISTRIBUTOR  D4A4-07        AND CARBURETOR  DCH340-48,47               *  15.04      16.41  *  15.79      16.30  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* NISSAN PICKUP          K501             F 119 2V M4 2750 4.38 58.2 855 *  17.19      15.84  *  18.14      16.48  *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *                    *                    *
* DISTRIBUTOR  D4F4-03        AND CARBURETOR  DCH340-1                   *  15.01      15.84  *  16.85      15.75  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* NISSAN PICK-UP         K497             C 119 2V A  2750 4.11 57.4 930 *  17.70      15.16  *  17.50      15.88  *
* NISSAN 710             B1392            C 119 2V A  2750 3.70 54.7 677 *  16.99      15.14  *  18.66      15.88  *
* NISSAN 710             BW0112           C 119 2V A  3000 3.70 54.7 680 *  16.83      15.07  *  18.34      15.86  *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *                    *                    *
* DISTRIBUTOR  D4F4-04        AND CARBURETOR  DCH340-45A                 *  11.31      16.41  *  12.83      16.30  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* NISSAN PICK-UP         K496             C 119 2V M4 2750 4.38 58.2 931 *  12.92      15.84  *  14.74      16.48  *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *                    *                    *
* DISTRIBUTOR  D4F4-04        AND CARBURETOR  DCH340-1                   *  11.31      15.84  *  12.83      15.75  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* NISSAN 710             BK0274           C 119 2V M4 2750 3.70 54.7 679 *  12.26      15.26  *  13.92      15.93  *
* NISSAN 710             BWC119           C 119 2V M4 3000 3.70 54.7 679 *  12.14      15.19  *  13.69      15.91  *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *                    *                    *
* DISTRIBUTOR  D4F5-01,02     AND CARBURETOR  DCH306-17                  *  20.82      16.17  *  21.40      16.21  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* NISSAN F-10            AKC464           C  85 2V M4 2250 3.47 53.8 669 *  18.53      16.53  *  19.13      16.11  *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *                    *                    *
* DISTRIBUTOR  D4F4-02        AND CARBURETOR  DCH306-15A                 *  15.79      16.54  *  17.84      16.50  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* NISSAN B-210           AKC314           C  85 2V A  2500 3.89 60.4 675 *  17.18      16.73  *  17.79      16.33  *
* NISSAN B-210           A556             C  85 2V A  2250 3.89 60.4 674 *  17.35      16.81  *  18.09      16.34  *
*                                                                        *                    *                    *
* REFERENCE VALUE                                                        *                    *                    *
* DISTRIBUTOR  D4F5-01        AND CARBURETOR  DCH306-11A                 *  20.75      16.56  *  21.27      16.54  *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES              *                    *                    *
* NISSAN B-210           AK0295           C  85 2V M4 2250 3.89 53.4 575 *  20.54      16.98  *  21.13      16.43  *
* NISSAN B-210           AK0303           C  85 2V M5 2250 3.70 49.1 671 *  17.25      16.89  *  17.50      16.44  *
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Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

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**************************************************************************************************************
* PROGRAM VSIMTI *    98CID, MANUAL, 2500LB, 56.5N/V                 * RUN ON  10/30/76  AT  12.01.21   PAGE  7 *
**************************************************************************************************************
*                          *                                        *      FTP-URBAN       *     FTP-HIGHWAY      *
*                          *                                        ***********************************************
*                          *                                        *    FUEL WEIGHTED     *    FUEL WEIGHTED     *
*                          *                                        ***********************************************
*                          *                                        * ADVANCE * AIR/FUEL * ADVANCE * AIR/FUEL *
*                          *                                        * (DEGREE) *  RATIO   * (DEGREE) *  RATIO   *
**************************************************************************************************************
*                                                                   *                     *                      *
* REFERENCE VALUE                                                   *                     *                      *
* DISTRIBUTOR  D4A5-04       AND CARBURETOR  DCH306-16              *   20.66     16.44   *   21.12     16.45    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                      *
* NISSAN F-10            AK0401          F  85 2V M5 2250 3.47 54.1 338 *   18.62     16.80   *   18.98     16.35    *
*                                                                   *                     *                      *
* REFERENCE VALUE                                                   *                     *                      *
* DISTRIBUTOR  D4A5-04       AND CARBURETOR  DCH306-14A-            *   20.66     16.77   *   21.12     16.73    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                      *
* NISSAN B-210           AKC296          F  85 2V M4 2250 3.89 60.4 342 *   20.42     17.19   *   20.99     16.62    *
* NISSAN B-210           AKC313          F  85 2V M5 2250 3.70 49.1 339 *   17.18     17.10   *   17.39     16.63    *
*                                                                   *                     *                      *
* REFERENCE VALUE                                                   *                     *                      *
* DISTRIBUTOR  D4A5-05       AND CARBURETOR  DCH306-14A-            *   15.43     16.77   *   16.27     16.73    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                      *
* NISSAN B-210           A589            F  85 2V A  2250 3.89 60.4 341 *   15.95     17.05   *   16.50     16.57    *
*                                                                   *                     *                      *
* REFERENCE VALUE                                                   *                     *                      *
* DISTRIBUTOR  D4A4-04       AND CARBURETOR  DCH340-44A-            *   14.99     16.56   *   16.33     16.50    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                      *
* NISSAN 710             BWC116          F 119 2V M4 2750 3.70 54.7 344 *   16.26     15.96   *   17.72     16.69    *
* NISSAN 610             BWC117          F 119 2V M4 3000 3.70 54.7 346 *   16.10     15.83   *   17.42     16.67    *
*                                                                   *                     *                      *
* REFERENCE VALUE                                                   *                     *                      *
* DISTRIBUTOR  D4A4-06       AND CARBURETOR  DCH340-44A-            *   11.32     16.56   *   12.84     16.50    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                      *
* NISSAN 710             BWC115          F 119 2V A  2750 3.70 54.7 343 *   12.82     15.83   *   14.22     16.64    *
* NISSAN 610             BWC118          F 119 2V A  3000 3.70 54.7 345 *   12.69     15.75   *   13.97     16.62    *
*                                                                   *                     *                      *
* REFERENCE VALUE                                                   *                     *                      *
* DISTRIBUTOR  1359044.2     AND CARBURETOR  1261557.1              *   33.53     15.68   *   36.05     16.02    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                      *
* BMW    2002M           2360850         F 121 2V M4 2750 3.90 58.0 288 *   38.61     15.38   *   41.73     16.21    *
* BMW    2002A           2380798         F 121 2V A  2750 3.90 58.0 287 *   40.31     14.96   *   42.07     16.17    *
*                                                                   *                     *                      *
* REFERENCE VALUE                                                   *                     *                      *
* DISTRIBUTOR  M4C1R1P1      AND CARBURETOR  32ADFA1/100,           *   23.36     15.33   *   29.60     15.93    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES         *                     *                      *
* FIAT   124 SPT CPE     C268561         F 107 2V M5 2750 4.30 57.0 313 *   25.14     15.05   *   31.10     16.00    *
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Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

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*****************************************************************************************************
* PROGRAM VSIMII *    98CID, MANUAL, 2500LB, 56.5N/V               *  RUN ON  10/30/76  AT  12.01.21   PAGE  8 *
*****************************************************************************************************
*                              *                                   *      FTP-URBAN       *     FTP-HIGHWAY      *
*                              *                                   ***********************************************
*                              *                                   *    FUEL WEIGHTED     *    FUEL WEIGHTED     *
*                              *                                   ***********************************************
*                              *                                   *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL  *
*                              *                                   * (DEGREE) *   RATIO   * (DEGREE) *   RATIO   *
*****************************************************************************************************
*                                                                  *                      *                      *
* REFERENCE VALUE                                                  *                      *                      *
* DISTRIBUTOR  M401R1P1      AND CARBURETOR  32ADFA3/100           *   23.88      15.86   *   29.60      16.46   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                      *                      *
* FIAT    131 WGN        4000035         F 107 2V A   3000 4.44 66.0 317 *   29.47      15.43   *   35.68      16.45   *
*                                                                  *                      *                      *
* REFERENCE VALUE                                                  *                      *                      *
* DISTRIBUTOR  M401R1P1      AND CARBURETOR  32DATRA3/100          *   23.88      15.01   *   29.60      15.14   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                      *                      *
* FIAT    131            0097045                                   *                      *                      *
*                                                                  *                      *                      *
* REFERENCE VALUE                                                  *                      *                      *
* DISTRIBUTOR  M401P1        AND CARBURETOR  32ADFA4/100,          *   23.88      11.50   *   29.60      11.50   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                      *                      *
* FIAT    131            0000552         C 107 2V A   3000 4.44 66.0 645 *   29.47      11.19   *   35.68      11.49   *
* FIAT    124 SPT CPE    0271562         C 107 2V M5  2750 4.30 57.0 539 *   25.14      11.29   *   31.10      11.55   *
* FIAT    131 WGN        4013657         C 107 2V M5  3000 4.44 59.0 649 *   23.25      11.24   *   31.06      11.54   *
*                                                                  *                      *                      *
* REFERENCE VALUE                                                  *                      *                      *
* DISTRIBUTOR  T3T06073      AND CARBURETOR  215282-66             *   19.81      15.36   *   19.56      15.24   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                      *                      *
* TOYO K MAZDA 808       ECNAP-1         C  97 2V M4  2500 3.91 63.7 715 *   20.99      15.41   *   20.40      15.23   *
*                                                                  *                      *                      *
* REFERENCE VALUE                                                  *                      *                      *
* DISTRIBUTOR  T3T36275      AND CARBURETOR  215282-66             *   17.51      15.36   *   15.75      15.24   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                      *                      *
* TOYO K MAZDA 816 PU    ECNAT-1         C  97 2V M4  3000 4.38 59.2 737 *   17.54      15.24   *   15.36      15.20   *
* TOYO K 808 CPE         ECNAP-2         C  97 2V A   2500 4.10 63.7 717 *   20.13      15.30   *   19.30      15.18   *
* TOYO K 808 WAGON       ECNAP-3         C  97 2V A   2750 4.10 63.7 720 *   19.98      15.23   *   18.58      15.16   *
*                                                                  *                      *                      *
* REFERENCE VALUE                                                  *                      *                      *
* DISTRIBUTOR  D4H5-01       AND CARBURETOR  DCG306-35             *   15.57      17.05   *   14.12      17.65   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                      *                      *
* TOYO K MAZDA 808       EFTCP-1         F  78 2V M4  2750 4.11 63.7 339 *   15.26      17.59   *   13.79      17.43   *
* TOYO K MAZDA 808 SW    EFTCP-2         F  78 2V M4  2500 4.11 63.7 338 *   15.26      17.59   *   13.79      17.43   *
*                                                                  *                      *                      *
* REFERENCE VALUE                                                  *                      *                      *
* DISTRIBUTOR  T3T06074      AND CARBURETOR  DCG306-34             *   15.33      14.83   *   13.97      15.40   *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES        *                      *                      *
* TOYO K MAZDA 808       ECTCP-1         C  78 2V M4  2500 4.10 63.7 714 *   15.33      15.30   *   13.54      15.21   *
* TOYO K MAZDA 808 SW    ECTCP-2         C  78 2V M4  2500 4.10 63.7 715 *   15.33      15.30   *   13.54      15.21   *
*****************************************************************************************************
```

Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

```
*****************************************************************************************************
* PROGRAM VSIMIT *    98CID, MANUAL, 2500LB, 56.5N/V                  *  RUN ON  10/30/76  AT  12.01.21   PAGE  9 *
*****************************************************************************************************
*                          *                                           *      FTP-URBAN      *      FTP-HIGHWAY      *
*                          *                                           ***********************************************
*                          *                                           *    FUEL WEIGHTED    *    FUEL WEIGHTED      *
*                          *                                           ***********************************************
*                          *                                           *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL  *
*                          *                                           * (DEGREE) *  RATIO   * (DEGREE) *  RATIO    *
*****************************************************************************************************
*                                                                      *                     *                       *
* REFERENCE VALUE                                                      *                     *                       *
* DISTRIBUTOR  T3I05179     AND CARBURETOR  DCJ328-7                   *   20.47     13.32   *   21.76      13.70    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                       *
* TOYO K COURIER PU    ECVBT-1        C 110 2V M4 3000 4.11 54.7 939   *   20.88     12.94   *   22.34      13.77    *
*                                                                      *                     *                       *
* REFERENCE VALUE                                                      *                     *                       *
* DISTRIBUTOR  T3I06071     AND CARBURETOR  DCJ328-2                   *   11.82     12.35   *   14.16      12.64    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                       *
* TOYO K B1600 PU      ENAT-1         F  97 2V M4 3000 4.33 58.2 361   *   11.64     12.45   *   13.95      12.60    *
* TOYO K B1600 PU      ENAT-2         F  97 2V M4 3000 4.38 58.2 962   *   11.34     12.43   *   13.95      12.60    *
*                                                                      *                     *                       *
* REFERENCE VALUE                                                      *                     *                       *
* DISTRIBUTOR  T3I03672     AND CARBURETOR  DCJ328-3                   *   13.49     12.18   *   15.62      12.31    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                       *
* TOYO K COURIER PU    EVBT-1         F 110 2V M4 3000 4.11 54.7 863   *   13.80     11.83   *   15.82      12.38    *
*                                                                      *                     *                       *
* REFERENCE VALUE                                                      *                     *                       *
* DISTRIBUTOR  T3I03673     AND CARBURETOR  DCJ328-4A                  *   12.55     11.79   *   15.35      11.92    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                       *
* TOYO K COURIER PU    EVBT-2         F 110 2V A  3000 4.62 61.5 940   *   14.82     11.40   *   17.64      11.94    *
*                                                                      *                     *                       *
* REFERENCE VALUE                                                      *                     *                       *
* DISTRIBUTOR  8942065420   AND CARBURETOR  894206355-40               *   15.21     13.90   *   17.81      14.20    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                       *
* ISUZU  LUV P.U.      N5F133200614  C 111 2V M4 2750 4.10 55.6 923    *   16.03     13.55   *   18.73      14.30    *
* ISUZU  LUV P.U.      N5F133200616  C 111 2V A  2750 4.10 55.6 927    *   16.73     13.45   *   19.11      14.20    *
*                                                                      *                     *                       *
* REFERENCE VALUE                                                      *                     *                       *
* DISTRIBUTOR  8942065420   AND CARBURETOR  894206351-40               *   15.21     15.49   *   17.81      15.71    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                       *
* ISUZU  LUV P.U.      N5F133200610  F 111 2V M4 2750 4.10 55.6 823    *   16.03     15.11   *   18.73      15.82    *
* ISUZU  LUV P.U.      N5F133200611  F 111 2V A  2750 4.10 55.6 851    *   15.73     14.99   *   19.11      15.77    *
*                                                                      *                     *                       *
* REFERENCE VALUE                                                      *                     *                       *
* DISTRIBUTOR  8942065420   AND CARBURETOR  894205543-40               *   15.21     15.17   *   17.81      15.28    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES            *                     *                       *
* ISUZU  OPEL          N1034717021   C 111 2V M4 2500 3.54 55.8 557    *   16.03     14.87   *   18.86      15.41    *
* ISUZU  OPEL          N1034717023   C 111 2V A  2500 3.54 55.8 559    *   16.74     14.75   *   19.24      15.36    *
*****************************************************************************************************
```

Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Continued)

```
***********************************************************************************************************
* PROGRAM VSIMII *    98CID, MANUAL, 2500LB, 56.5N/V              *  RUN ON  10/30/76  AT  12.01.21   PAGE 10 *
***********************************************************************************************************
*                          *                                      *        FTP-URBAN       *       FTP-HIGHWAY      *
*                          *                                      ***************************************************
*                          *                                      *     FUEL WEIGHTED      *     FUEL WEIGHTED      *
*                          *                                      ***************************************************
*                          *                                      *  ADVANCE  * AIR/FUEL  *  ADVANCE  * AIR/FUEL  *
*                          *                                      * (DEGREE)  *   RATIO   * (DEGREE)  *   RATIO   *
***********************************************************************************************************
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *   15.42     16.32  *   17.98     16.48  *
* DISTRIBUTOR  8942065420   AND CARBURETOR  8942038740                  *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* ISUZU  OPEL        N1934717017    F 111 2V M4 2500 3.54 55.0 329      *   16.26     15.99  *   19.74     16.61  *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *   15.21     16.64  *   17.81     16.79  *
* DISTRIBUTOR  8942065420   AND CARBURETOR  8942054570                  *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* ISUZU  OPEL        N1934717018    F 111 2V A  2500 3.54 55.0 329      *   15.74     16.13  *   19.24     16.08  *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *   37.77     15.78  *   41.59     16.11  *
* DISTRIBUTOR  R.243/D.64   AND CARBURETOR  32DARA                      *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* RENAUL             650                                                *                    *                    *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *   37.77     15.55  *   41.69     15.89  *
* DISTRIBUTOR  R.243/D.64   AND CARBURETOR  32DARA1                     *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* RENAUL             347                                                *                    *                    *
* RENAUL             826                                                *                    *                    *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *   37.77     15.74  *   41.59     15.91  *
* DISTRIBUTOR  R243/064     AND CARBURETOR  32DARA10                    *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* RENAUL 12 WGN      652            F 100 2V M4 2500 3.77 59.6 364      *   40.15     15.71  *   44.45     15.93  *
* RENAUL 15TL C/E    665            F 100 2V M4 2500 3.77 59.6 353      *   40.15     15.71  *   44.45     15.93  *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *   37.77     15.97  *   41.69     16.24  *
* DISTRIBUTOR  R243/064     AND CARBURETOR  32DARA11                    *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* RENAUL 12GTL       PS651          F 100 2V A  2500 3.55 55.5 302      *   40.06     15.79  *   43.25     16.21  *
* RENAUL 12 SW       PS654          F 100 2V A  2750 3.55 56.6 365      *   39.68     15.71  *   42.52     16.20  *
* RENAUL 17TL        PS660          F 100 2V A  2750 3.55 56.5 355      *   39.68     15.71  *   42.52     16.20  *
*                                                                       *                    *                    *
* REFERENCE VALUE                                                       *   19.87     15.13  *   21.00     15.52  *
* DISTRIBUTOR  055905205H   AND CARBURETOR  055129022                   *                    *                    *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES             *                    *                    *
* VW     RABBIT      459                                                *                    *                    *
***********************************************************************************************************
```

Table 5-26. Fuel-Weighted Calibration Factors
Reference Vehicle 2500/M-4/3.07, 97.6 CID (Concluded)

```
*****************************************************************************************************
* PROGRAM VSIMII *    98CID, MANUAL, 2500LB, 56.5N/V           *  RUN ON  10/30/76  AT  12.01.21   PAGE 11 *
*****************************************************************************************************
*                            *                                  *      FTP-URBAN      *     FTP-HIGHWAY     *
*                            *                                  *********************************************
*                            *                                  *    FUEL WEIGHTED    *    FUEL WEIGHTED    *
*                            *                                  *********************************************
*                            *                                  *  ADVANCE * AIR/FUEL *  ADVANCE * AIR/FUEL *
*                            *                                  * (DEGREE) *  RATIO   * (DEGREE) *  RATIO   *
*****************************************************************************************************
*                                                                    *                     *                     *
* REFERENCE VALUE                                                    *  19.87     15.91    *  21.00     16.38    *
* DISTRIBUTOR  055905220FH   AND CARBURETOR  055129021S              *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                     *
* VW     RABBIT        4057-5081        F  97 1V M4 2250 3.70 54.8 418 *  19.49     15.99    *  20.69     16.39    *
* VW     RABBIT        4057-5776(014)   F  97 1V M4 2250 3.48 51.0 416 *  18.35     15.96    *  19.38     16.40    *
*                                                                    *                     *                     *
* REFERENCE VALUE                                                    *  27.49     15.74    *  32.87     17.23    *
* DISTRIBUTOR  R269/C34      AND CARBURETOR  320IR46                 *                     *                     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES          *                     *                     *
* RENAUL 5GTL          TP1              F  79 2V M4 2000 3.53 58.0 361 *  25.52     17.37    *  30.66     17.08    *
* RENAUL 5TL           TP4              F  79 2V M4 2000 3.63 59.8 361 *  26.20     17.39    *  31.53     17.07    *
*****************************************************************************************************
```

SECTION 6

PROGRAM COMPUTATIONAL FEATURES AND OPERATION

6.1 AIR FLOW COMPUTATIONS (PROGRAM VSIMI)

The primary purpose of Program VSIMI is to add air flow information to the results of the VEHSIM program. Secondary objectives are engine-map scaling and computation of fuel-weighted average values of air-fuel ratio and spark advance.

6.1.1 Inputs

Inputs to VSIMI consist of the output tape (tape 19) from VEHSIM and two engine maps input by punched cards. The carburetor engine map gives air-flow rate or air-fuel ratio as a function of engine rotational speed and engine load (BMEP), and the distributor engine map gives spark advance as a function of rotational speed and load. Normally, engine rotational speed is given in rpm, but the option is provided to input engine speed in the form of piston speed and convert internally to rpm through rpm = 6 × piston speed/stroke, with piston speed given in feet/minute and stroke in inches. Air flow rate is normally input in units of pounds of fuel per minute, but may be input in units of pounds of fuel per hour and converted internally. Additional punched card input identifies the carburetor-distributor-engine combination, the input unit options (rpm or piston speed, and air-flow rate or air-fuel ratio), engine displacement (cubic inches), and stroke (inches). An initial card indicates whether engine scaling is to be done, and gives the displacement and stroke of the desired engine.

The results from the vehicle simulation program are input as a magnetic tape (or permanent disc file) giving, for each segment of the driving cycle:

a. cumulative time (seconds)

b. cumulative distance (miles)
c. cumulative fuel consumption (pounds)
d. engine horsepower (hp)
e. engine torque (lb-ft)
f. engine rotational speed (rpm)
g. manifold vacuum (inches of mercury)
h. percent of wide-open throttle
i. segment identification

6.1.2 Outputs

The primary output from VSIMI is a magnetic tape (or permanent disc file) called tape 29 giving, for each segment of the driving cycle:

a. cumulative time (seconds)
b. cumulative distance (miles)
c. cumulative fuel consumption (pounds)
d. engine horsepower (hp)
e. engine torque (lb-ft)
f. engine rotational speed (rpm)
g. manifold vacuum (inches of mercury)
h. percent of wide-open throttle
i. engine load (BMEP)
j. incremental fuel consumed during segment (pounds)
k. incremental air consumed during segment (pounds)
l. air-fuel ratio
m. spark advance (degrees)
n. fuel-weighted air-fuel ratio, through current segment
o. fuel-weighted spark advance (degrees), through current segment
p. air flow rate (lb/min)

The first eight words on tape 29 are the same as the corresponding words on tape 19. Consequently, a VSIMI output tape 29 could be used as input tape 19 for a subsequent VSIMI run.

Printed VSIMI outputs provide verification of each computer run by reproducing the carburetor and distributor maps and providing samples (one segment in 50) of the tape 19 (VEHSIM) input and of the newly calculated parameters written to tape 29. The final (full driving cycle) fuel-weighted average air-fuel ratio and fuel-weighted average spark advance are also printed out.

6.1.3 Program Structure

The two major stages of Program VEHSIM consist of: the input of engine map data from punched cards and input of driving cycle data from tape 19; and computation of air flow rate, air-fuel ratio, spark advance, and fuel-weighted air-fuel ratio and spark advance for each segment of the driving cycle and writing the resulting values onto tape 29.

6.1.3.1 Data Input

Engine maps are read from punched cards in subroutine CARDCD, and many checks are performed. Program operation is aborted if any check fails.

a. There must not be a premature end of file.
b. Cards must be in the proper order, as indicated by card headings.
c. Values for designating input options must be meaningful.
d. Speed values must increase steadily.
e. Engine displacement must be positive.
f. Load data must increase steadily.

Also, the engine maps are set up in core within CARDCD, with a count of the number of points on each load card so that the tables can have any length from 2 to 10.

In subroutine CYCLE, the data from tape 19 are read and stored in core.

6.1.3.2 Engine Map Scaling

Engine map scaling, if required, is performed by use of the same algorithms as those employed in VEHSIM. For both the carburetor (air flow rate) and distributor (spark advance) maps, rpm is scaled as

$$\text{RPM(OUT)} = \frac{\text{STROKE(IN)}}{\text{STROKE(OUT)}} \text{ RPM(IN)}$$

so that piston speed is constant. When air flow rate is given in the carburetor map, air flow rate is scaled to be proportional to rpm and displacement:

$$\text{AIR FLOW RATE(OUT)} = \frac{\text{STROKE(IN)}\cdot\text{CID(OUT)}}{\text{STROKE(OUT)}\cdot\text{CID(IN)}} \cdot \text{AIR FLOW RATE(IN)}$$

6.1.3.3 Computations

In the computation stage, subroutines AIR, SPARK, and TOUT are called for each segment of the driving cycle. Subroutine AIR determines the (incremental) fuel consumed during the segment by subtracting the previous value of cumulative fuel consumption from the current value. The time duration of the segment is similarly determined. The load value for entering the engine maps is determined from BMEP = 150.8 × TORQUE/DISPLACEMENT, and the rpm value is read. Then the value of air flow rate or air-fuel ratio is found by double interpolation with respect to load and rpm within the carburetor engine map. The first two interpolations are with respect to load, for the two constant rpm lines that bracket the rpm value, and the final interpolation is with respect to rpm. In any interpolation, if the independent variable lies beyond the range of tabulated values, the near end-point value is utilized.

> If carburetor data are given in terms of air flow rate, incremental (segment) air consumed is then found by multiplying air flow rate by the duration of the segment in minutes, and the total air consumed during the driving cycle is accumulated. The segment air-fuel ratio is computed by dividing incremental air by incremental fuel, and the current value of fuel-weighted air-fuel ratio is computed by dividing the cumulative air by cumulative fuel.
>
> If carburetor data are given in terms of air-fuel ratio, segment air consumption is found by multiplying the air-fuel ratio by segment fuel consumption, and the air flow rate is found by dividing segment air by the duration of the segment.

In subroutine SPARK the value of spark advance is found by double interpolation with respect to load and rpm within the distributor engine map. The product (segment fuel) × (segment spark advance) is computed and accumulated, and the current value of fuel-weighted spark advance is computed from cumulative segment fuel-advance product/cumulative fuel consumption.

Within subroutine TOUT the output data listed in Section 6.1.2 are written onto tape 29.

At the conclusion of the run, the final values of fuel-weighted air-fuel ratio and fuel-weighted spark advance are printed out.

6.1.4 Data Input Formats

Engine-map data are input from punched cards in the formats depicted in Table 6-1. Except for the third identification card, all input cards begin with a designation phrase which must be included, since that phrase is used to check whether the input cards are in the proper order. All numerical data must include a decimal point.

The first card designates whether engine scaling is to be performed. The word SCALE must appear in columns 1-5. Columns 7-9 must contain "YES" and column 10 be blank if scaling is to be performed, while columns 7-8 must contain "NO" and columns 9-10 be blank if no engine scaling is to be performed.

Table 6-1. Input Cards for VSIMI

FORTRAN CODING FORM

PROBLEM NO. ________ PROGRAMMER ________ KEYPUNCHED ________ VERIFIED ________ DATE ________ PAGE ___ OF ___

STATEMENT NO. 1	6	7	13	19	25	31	37	43	49	55	61	67 72	73 80
SCALE		YES NO	Displacement	Stroke									
*CARB				Engine	or	PISTON RPM		BMEP	or	AFR LBS	(HR)		
		Identification Card, up to 80 Digits											
DATA			Displacement		Stroke								
SPEED		POINT	(rpm)										
LOAD	P	OINT	L1	L2	...	10 Values of Load						L10	
CARB	D	ATA	C1	C2	..	10 Values of Carb. Data (Air-Flow Rate or Air/Fuel Rates)						C2	
	Additional sets of speed, load, carburetor												
*ENGI	N	E TIMI	NG	Engine	or	PISTON RPM		BMEP		DEG			
		Identification Card, up to 80 Digits											
DATA			Displacement		Stroke								
SPEED		POINT	(rpm)										
LOAD	P	OINT	L1	L2	...	10 Values of Load						L10	
ADVAN	C	E	A1	A2		10 Values of Spark Advance						A10	
		Additional sets of speed, load, spark advance											

The second card is used to select three data-type options. The words that select the option must be left-justified within the 6-column fields.

a. If columns 31-36 contain "PISTON", engine speeds are given in terms of piston speed (ft/min). If columns 31-36 contain "RPM", engine speeds are given in rpm.

b. If columns 55-60 contain "AFR", carburetor data are presented as the air-fuel ratio. If they contain "LBS", carburetor data are presented as air flow rate.

c. The air flow rate is presented in units of pounds of air per minute unless columns 61-66 contain "HR".

The third card must be present; its contents are printed to identify the carburetor and vehicle being run. The fourth card contains engine displacement (cubic inches) in columns 13-18 and engine stroke (inches) in columns 25-30.

The remaining carburetor cards consist of 2 to 10 sets of three cards:

a. The SPEED card contains the rpm or piston speed value in columns 13-18.

b. The LOAD card contains 2 to 10 values of engine load (BMEP).

c. The CARB DATA card contains air-fuel ratio or air flow rate corresponding to the engine load values.

The first distributor, "*ENGINE TIMING", card is used to designate whether engine speeds in the distributor engine map are presented as piston speed (in which case, columns 31-36 contain "PISTON") or as rpm (in which case, columns 31-36 contain "RPM" left-justified). The contents of the second distributor card are used for identification. The third distributor card contains, again, engine displacement and stroke. If piston speeds are used in the distributor engine map, the stroke must be given, even if the carburetor engine map also used piston speeds.

The remaining distributor cards consist of 2 to 10 sets of three cards giving, respectively: engine speed; 2 to 10 load values; and the 2 to 10 values of corresponding spark advance.

An example of a full set of VSIMI input cards is given in Table 6-2 on page 6-10.

6.1.5 Implementation

VSIMI is written in FORTRAN IV. It has been run on the CDC 7600 computer under the SCOPE 2.1 operating system. Three system-provided functions are utilized:

a. The EOF(N) function, which tests for an end-of-file condition.

b. The DATE(X) function, which returns the date in the form of a 10-letter alphanumeric word.

c. The TIME(X) function, which returns the time of day in the form of a 10-letter alphanumeric word.

Except for the date and time, which are written by subroutine CARDCD, all alphanumeric words contain 5 or fewer characters. Names of variables, subroutines, and common blocks contain 6 or fewer characters.

6.2 FUEL-WEIGHTED CALIBRATION FACTORS (PROGRAM VSIMII)

The purpose of Program VSIMII is to calculate, for many vehicles, fuel-weighted average values of air-fuel ratio and spark advance and to add those values to an existing data base (which is in the form of a magnetic tape) to create an expanded data base. For each vehicle, two different driving cycle regimes are used that may, for example, be the FTP urban cycle and the FTP highway cycle. Specification of a vehicle requires input of its weight, engine displacement, N/V (speed ratio), and transmission type. It also requires that the distributor and carburetor be identified. In VSIMI, engine maps are used to give air-fuel ratio and spark advance as functions of two engine parameters, load and speed. In contrast, in VSIMII the distributor and carburetor are described by calibration curves with centrifugal advance presented as a function of engine rpm, vacuum advance presented as a function of manifold vacuum, and air-fuel ratio presented as a function of air flow rate.

Computations of fuel-weighted average values are carried out in two stages. They are first calculated for the input distributor-carburetor combination with the VEHSIM and VSIMI results for the reference vehicle, that is, the vehicle whose performance was simulated. The final, configuration-corrected values are computed by correcting the reference vehicle results by applying the sensitivity coefficients and the differences between the weights, displacements, speed ratios, and (if appropriate) transmission type of the reference vehicle and of each vehicle utilizing the distributor-carburetor combination.

6.2.1 Inputs

Inputs to VSIMII consist of the output tapes from VSIMI runs, on the same engine and vehicle, on two different driving cycles and of punched cards giving vehicle data and identification information as well as the distributor and carburetor calibration curves for all desired vehicles. The results of VSIMI are on magnetic tapes (designated tape 29 and tape 30) in the format shown in Section 6.1.2.

6.2.2 Output

Both tape and printed output are produced by VSIMII. The printed output, in the form shown in Table 6-2, presents fuel-weighted average spark advance and air-fuel ratio for all vehicles for two different driving cycle regimes. For each distributor-carburetor combination, the reference vehicle results are first printed out, followed by the configuration-corrected results for each vehicle which uses that distributor and carburetor. In the tabulation, the distributor and carburetor part designations (limited to no more than 12 characters) are printed. Vehicles are identified by:

a. manufacturer's name (6 characters)

Table 6-2. VSIMII Printed Output

```
**************************************************************************************************************
* PROGRAM VSIMII *    350CID, AUTOMATIC, 5000LB, 38.8N/V          * RUN ON  10/28/76  AT  19.51.41   PAGE  1 *
**************************************************************************************************************
*                         *                                         *       FTP-URBAN       *      FTP-HIGHWAY      *
*                         *                                         ***********************************************
*                         *                                         *    FUEL WEIGHTED      *    FUEL WEIGHTED      *
*                         *                                         ***********************************************
*                         *                                         *  ADVANCE * AIR/FUEL  *  ADVANCE * AIR/FUEL  *
*                         *                                         * (DEGREE) *   RATIO   * (DEGREE) *   RATIO   *
**************************************************************************************************************
*                                                                          *                         *                         *
* REFERENCE VALUE                                                          *                         *                         *
* DISTRIBUTOR  3228265       AND CARBURETOR  SF3227439                     *   19.37       14.31     *   22.57       15.65     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                         *                         *
* AMC     MATADOR         D51-17R          F 360 4V A  4500 2.87 37.8  22  *   18.45       14.81     *   22.92       15.70     *
* AMC     MATADOR WGN     D58-39R          F 360 4V A  4500 3.54 44.4  24  *   21.16       14.87     *   26.56       15.68     *
*                                                                          *                         *                         *
* REFERENCE VALUE                                                          *                         *                         *
* DISTRIBUTOR  3228263       AND CARBURETOR  SF3227441                     *   18.37       14.90     *   22.67       15.30     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                         *                         *
* AMC     MATADOR         D51-18R          F 360 2V A  4500 2.87 37.8  23  *   18.45       14.90     *   22.92       15.34     *
* AMC     MATADOR         D58-?55(R)       F 360 2V A  4500 3.54 44.4  25  *   21.15       14.97     *   26.56       15.33     *
*                                                                          *                         *                         *
* REFERENCE VALUE                                                          *                         *                         *
* DISTRIBUTOR  3228263       AND CARBURETOR  SF3227439                     *   25.07       14.81     *   28.31       15.65     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                         *                         *
* AMC     MATADOR         D51-22R          C 360 4V A  4500 3.15 41.5 461  *   27.23       14.85     *   31.47       15.69     *
* AMC     MATADOR         D58-370(R)       C 360 4V A  4500 3.54 44.4 462  *   29.97       14.87     *   33.17       15.68     *
*                                                                          *                         *                         *
* REFERENCE VALUE                                                          *                         *                         *
* DISTRIBUTOR  3228266       AND CARBURETOR  SF3227441                     *   21.30       14.96     *   24.41       15.35     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                         *                         *
* AMC     MATADOR         D51-21R          C 360 2V A  4500 3.15 41.5 460  *   23.13       15.00     *   26.38       15.38     *
* AMC     MATADOR         D58-42R          C 360 2V A  4500 3.54 44.4 463  *   24.53       15.03     *   28.50       15.38     *
*                                                                          *                         *                         *
* REFERENCE VALUE                                                          *                         *                         *
* DISTRIBUTOR  3574415-360   AND CARBURETOR  4035046-350                   *   26.42       16.12     *   35.40       16.08     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                         *                         *
* CHRYSL PLYMOUTH         1035             F 360 2V A  4000 3.21 43.7  62  *   30.31       15.26     *   41.35       16.13     *
* CHRYSL PLYMOUTH         4071             F 360 2V A  4500 2.71 34.5  64  *   24.59       16.09     *   32.94       16.14     *
* CHRYSL FURY             4072             F 360 2V A  4500 3.21 42.9  67  *   29.55       16.18     *   40.19       16.12     *
* CHRYSL CORONET          4073             F 360 2V A  4000 2.45 32.3  59  *   23.30       16.14     *   31.56       16.16     *
*                                                                          *                         *                         *
* REFERENCE VALUE                                                          *                         *                         *
* DISTRIBUTOR  3874597-350   AND CARBURETOR  3830229-350                   *   26.77       15.28     *   39.26       17.56     *
* CONFIGURATION-CORRECTED VALUES FOR THE FOLLOWING VEHICLES                *                         *                         *
* CHRYSL VALIANT          2069             F 360 4V A  4000 3.21 43.5  51  *   32.59       16.42     *   45.39       17.61     *
* CHRYSL PLYMOUTH         2074             F 360 4V A  4000 2.94 39.9  60  *   28.41       15.38     *   42.39       17.62     *
**************************************************************************************************************
```

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b. model (13 characters)
c. identification number (14 characters)
d. Federal or California emission certification
e. engine displacement (cubic inches)
f. carburetor type
g. transmission type
h. inertia weight class
i. rear axle ratio
j. speed ratio (N/V)
k. data base sequence number

Other printed outputs are: a listing of all input cards; sampled data from tapes 29 and 30; and, if desired, a tabulation of the distributor and carburetor calibration curves. If program execution is terminated because of a card-input error, an error message is printed together with an image of the offending card.

The tape output consists of an expansion of the data base tape provided by EPA. Data for each vehicle occupy two records: the first record consists of a direct copy of the EPA tape record with a sequence number appended, and the second record contains data added by Aerospace.

The contents of the first record are:

a. manufacturer's code
b. vehicle inertia weight
c. engine family
d. displacement
e. transmission type
f. carburetor type
g. rear axle ratio
h. N/V (speed ratio)
i. vehicle model year
j. certification standard
k. projected sales

l. test number

m. urban fuel economy: 1972 Federal Test Procedure

n. urban fuel economy: 1975 Federal Test Procedure

o. highway fuel economy: 1975 Highway Fuel Economy Test

p. compact fuel economy (55% urban, 45% highway)

q. car line

r. sequence number (added by Aerospace)

The contents of the second record are:

a. configuration-corrected fuel-weighted spark advance for urban driving cycle

b. configuration-corrected fuel-weighted air-fuel ratio for urban driving cycle

c. configuration-corrected fuel-weighted spark advance for highway driving cycle

d. configuration-corrected fuel-weighted air-fuel ratio for highway driving cycle

e. manufacturer's name (6 characters)

f. identification number (14 characters)

g. distributor part number (12 characters)

h. carburetor part number (12 characters)

i. reference vehicle weight

j. reference vehicle displacement

k. reference vehicle N/V (speed ratio)

l. reference vehicle transmission type

m. reference vehicle fuel-weighted spark advance for urban driving cycle

n. reference vehicle fuel-weighted air-fuel ratio for urban driving cycle

o. reference vehicle fuel-weighted spark advance for highway driving cycle

p. reference vehicle fuel-weighted air-fuel ratio for highway driving cycle

6.2.3 Program Structure

Execution of Program VSIMII begins with reading driving cycle data from tapes 29 and 30 and storing in core for all segments:

a. cumulative time (seconds)
b. cumulative fuel consumption (pounds)
c. engine rotational speed (rpm)
d. manifold vacuum (inch of mercury)
e. percent of wide-open throttle
f. air flow rate (lb/min)

These are the only items from the VSIMI output tapes that are used subsequently.

The main computations are carried out in turn for each distributor-carburetor combination and the specific vehicle configurations associated with them. These computations consist of:

a. Reading input data and checking it and setting up the tables for calibration curves of centrifugal advance, vacuum advance, and air-fuel ratio.

b. For each segment, in turn, of the first driving cycle, computing the current value of the fuel-weighted spark advance and air-fuel ratio for the reference vehicle. The final pair are the desired reference vehicle results for that cycle.

c. Performing the same computations for the second driving cycle.

d. Utilizing sensitivity coefficients and the card-input values for weight, displacement, N/V, and transmission type for both the reference vehicle and the specific vehicle configurations to obtain configuration-corrected results. (Configuration-corrected values are not computed if any of the specific configuration parameters are missing.) The vehicle identification parameters and reference vehicle values are stored in core.

After computations have been completed for all distributor-carburetor sets and the specific vehicle configurations associated with them, an updated data base tape is prepared. The "old" data base tape is read one vehicle at a time (two records). A check is then made and, if the sequence number from the tape does not coincide with the card-input sequence number for any specific vehicle configuration, the two records are written unchanged onto the "new" data base tape. If the sequence number from the tape matches the sequence number of some specific vehicle configuration, then the first record is written unchanged onto the new tape, configuration-corrected results are computed anew (this time using specific-vehicle parameters read from the data base tape and reference-vehicle parameters previously read from cards), and an updated second record is written onto the "new" tape.

6.2.3.1 Data Input

Calibration curves and identification information are read by a series of subroutines that read, check, and store data. They verify that data cards are in proper order by checking each card heading, and the run is aborted if an incorrect card heading is found. No checks are made on the calibration curve values themselves, however. Normal program termination occurs if an end-of-file condition (no more data cards) is encountered, when a new distributor would be expected.

6.2.3.2 Computations

Basic computations are performed within subroutine SEGCMP, with one call to SEGCMP for each segment. Values of engine rpm, manifold vacuum, air-flow rate, percent of wide-open throttle, and cumulative fuel consumption are read from values stored in the core. The incremental fuel consumed during the segment is determined by subtracting the previous value of cumulative fuel consumption from the current value. Centrifugal advance, vacuum advance, and (uncorrected) air-fuel ratio are found by linear interpolation in calibration curves with respect, respectively, to engine rpm, manifold vacuum, and air-flow rate.

A correction may then be made to the air-fuel ratio. The correction

$$\frac{\text{percent throttle - 90\%}}{10\%} * (\text{WOT decrement})$$

is subtracted from the air-fuel ratio if the percent of throttle exceeds 90 percent. The "WOT decrement" is a single value for each carburetor, input from the carburetor designation card.

Total spark advance is obtained by adding centrifugal spark advance and vacuum spark advance. The product (segment fuel) × (segment spark advance) is computed and accumulated, and the current value of fuel-weighted spark advance is computed from (accumulated fuel × advance product)/(cumulative fuel consumption).

The product (segment fuel) × (segment air-fuel ratio) is computed and accumulated, and the current value of fuel-weighted air-fuel ratio is computed from (accumulated fuel × advance product)/(cumulative fuel consumption).

At the end of computations for each distributor-carburetor combination, the final values of reference vehicle fuel-weighted air-fuel ratio and fuel-weighted spark advance are printed out for both cycles.

Application of sensitivity coefficients to obtain configuration-corrected values is performed within subroutine SENAP. This subroutine is utilized both in obtaining values for printed output and values for tape output.

The process of obtaining an updated tape is carried out in subroutine MERGE after all other calculations have been completed.

6.2.4 Data Input Formats

Table 6-3 depicts the formats used for data input and case identification. The final seven cards apply to the entire run. The initial card contains the name of the first driving cycle in columns 1-19, the

Table 6-3. Input Cards for VSIMII

FORTRAN CODING FORM

PROBLEM NO. ______ PROGRAMMER ______ KEYPUNCHED ______ VERIFIED ______ DATE ______ PAGE ___ OF ___

STATEMENT NO. 1	6	7	13	19	25	31	37	43	49	55	61	67 72	73 80
Digits 1-19: Name of first cycle				Digits 20-39: Name of second cycle			Digits 41-80: Identification of Reference Vehicle						
Weight		Displacement	N/V	Rear Axle Ratio	A M	(Weight Displacement, speed (N/V) ratio, rear axle ratio, transmission type, of Ref. vehicle)							
SFWT1		SFWT2	SFWT3	SFWT4				Weight		1	Urban spark advance		
SFDSPL1		SFDSPL2	SFDSPL3	SFDSPL4	Sensitivity factors for			Displacement		2	Highway spark advance		
SFNOV1		SFNOV2	SFNOV3	SFNOV4				N/V		3	Urban air/fuel		
SFTTY1		SFTTY2	SFTTY3	SFTTY4				Transmission type		4	Highway air/fuel		
Warn				(Magnitude of configuration correction warning message criterion)									
*DIST	R			←12 digit part name→									
	n	sq 1	sq 2	sq 3	...	sq n		(Number of vehicles in set, sequence numbers)					vehicle
		rar 1	rar 2	rar 3		rar n				(rear-axle ratios)			data
		nov 1	nov 2	nov 3		nov 4		(N/V, speed ratios)					cards
←13 digit manufacturer→			←13 digit model→		←14 digit identification →			C F ↔ cid		m V A F I M.-m	↔ weight	(Vehicle identification)	
		(a total of n vehicle identification cards)											
ADVANC	E		CA1	CA2	up to 10 values of centrifugal advance								
ENGIN	E	RPM	R1	R2	up to 10 values of engine RPM								
ADVANC	E		VA1	VA2	up to 10 values of vacuum advance								
VACUU	M		V1	V2	up to 10 values of manifold vacuum								
*CARB				←12 digit part name→									
AFR			A/F(1)	A/F(2)	up to 10 values of air/fuel ratio								
LBSAI	R		A1	A2	up to 10 values of air flow rate								

name of the second driving cycle in columns 21-39, and identification of the vehicle and engine in columns 41-80. The second card contains reference vehicle parameters. Weight, displacement, speed ratio, and rear axle ratio are contained in 6-character fields and the values must contain a decimal point. Column 25 contains the letter "A" or "M" depending upon whether the reference vehicle has an automatic or a manual transmission. Values for the sensitivity coefficients are contained on cards 3 through 6 with four parameters (in 6-digit fields with a decimal point). As indicated in Table 6-3, card 3 contains weight sensitivity coefficients, in order, for urban spark advance, highway spark advance, urban air-fuel ratio, and highway air-fuel ratio. Similarly, cards 4, 5, and 6 contain, respectively, displacement, N/V, and transmission-type sensitivity coefficients. Card 7, in columns 1-6, contains a fractional value (from 0 up to, but not including, 1) which is used as the criterion for issuance (on an auxiliary output tape called tape 40) of a warning if the product of the four sensitivity coefficients is significantly different from unity. Specifically, if p is that product and w the input criterion, a warning message will be issued if $p < (1 - w)$ or if $p > 1/(1 - w)$.

All other input cards are in sets of from 12 to 23 cards, one set for each distributor-carburetor combination. Except as noted, all data must contain a decimal point.

a. The first card, headed "*DISTR", contains a 12-character part name in columns 19-30.

b. The next three cards contain specific vehicle data. The first of these uses integer (no decimal points, right-justified) format. In the first 6-digit field is the number of specific vehicle configurations followed by their data base sequence numbers, with a blank or negative value indicating that the vehicle does not appear in the data base. The second and third vehicle data cards, starting in column 7, contain rear axle ratios and speed (N/V) ratios for the same vehicles.

c. The next group may contain from 1 to 12 vehicle identification cards, one card per vehicle, in order corresponding to that given in the vehicle data. They contain the manufacturer's name, model, identification, certification, displacement (3-digit integer, left-justified), carburetor type or fuel injection information, transmission type, and weight (4-digit integer).

d. The vacuum advance calibration curve is contained in the next two cards, with the first, headed "ADVANCE", containing two to ten values of advance and the next, headed "VACUUM", containing the corresponding values of manifold vacuum.

e. The next card, headed "*CARB", contains a 12-character part name in columns 19-30 and the value of the wide-open throttle decrement in columns 31-36.

f. The carburetor calibration curve is contained in the next two cards, with the first, headed "AFR", containing two to ten values of air-fuel ratio and the next, headed "LBSAIR", containing corresponding values of air flow in pounds of air per minute.

It is of critical importance that, in all three calibration curves, the first values of the independent variable and the dependent variable should not both be zero. Should they both be zero, all entries in the table will be set to zero. Thus, for example, if the first value of centrifugal advance is 0, then the first value of rpm must not be 0, but a value of .00001 would be entirely acceptable.

An example of a set of VSIMII input cards is given in Table 6-6 on page 6-25.

6.2.5 Implementation

VSIMII is written in FORTRAN IV and has been operated on the CDC 7600 computer under the SCOPE 2.1 operating system. The following three system-provided functions are used:

a. The EOF(N) function, which tests for an end-of-file condition.

b. The DATE(X) function, which returns the date in the form of a 10-character alphanumeric word.

c. The TIME(X) function, which returns the time of day in the form of a 10-character alphanumeric word.

Except for the date and time, which are written by subroutine HEAD, all alphanumeric words contain five or fewer characters. Names of variables, subroutines, and common blocks contain six or fewer characters.

6.3 PROGRAM OPERATION

6.3.1 Introductory Note

This section presents examples of computer deck setups. Computer control statements are given in the SCOPE 2 control language for the CDC 7600. However, the "CATALOG" statement, which preserves a permanent file, has been simplified by omission of the ID = name (creator identification) parameter. In the examples it is assumed that data and output files, denoted by TAPExy, are permanent disc files. Control statement modifications would be required if physical magnetic tapes were to be used.

6.3.2 VEHSIM

In operation, Program VEHSIM requires an input file (TAPE4), a printer output file (TAPE6), two temporary files (TAPE2 and TAPE5), a data output file (TAPE19), and a parts file (TAPE3). Generation of a parts file, and its modification, is one of the capabilities of VEHSIM. Reference 1 describes all of the capabilities and input options for VEHSIM.

Table 6-4 is an example of the control and input cards required to perform a single simulation run using VEHSIM. The parts file (TAPE3) and output data file (TAPE19) are assumed to be permanent disc files. The VEHSIM input cards are instructions for the program to construct a vehicle from options contained in the parts file, define a driving schedule and route, and perform the simulation.

Table 6-4. Deck Setup for Program VEHSIM

```
            ****     SCOPE 2.1 CONTROL CARDS     ****

REQUEST(TAPE19,*PF)                RESERVE PERMANENT FILE LOCATION
ATTACH(TAPE3,5TAPE3)               TAPE 3 CONTAINS VEHSIM PARTS FILE
ATTACH(VEHSIM,5VEHSIM)             PERMANENT FILE WITH VEHSIM OBJECT CODE
LDSET(PRESET=ZERO)                 INITIALLY SET ALL CORE TO ZERO
VEHSIM.                            LOAD AND EXECUTE PROGRAM VEHSIM
CATALOG(TAPE19,5TAPE191)           PRESERVE TAPE 19 AS PERMANENT FILE

7/8/9 MULTIPLE PUNCH IN COLUMN 1  END OF RECORD CARD

            ****       VEHSIM INPUT CARDS       ****

*TITLE       CASE 8(A)   GMC 350, AUTO, 5000-LB CLASS, FTP URBAN, 3.08 IN
*PRINT UNITS       ENGINE       PISTON      BMEP          BSFC
*USE  V50008       VEHICLE
*LIMIT PRINT       SEGMENT
*USE  LEVEL        ROUTE
*USE  UDC001       DRIVING SCHEDULE
*USE  T252Y2       GEAR                     1
*USE  T152Y2       GEAR                     2
*USE  T100Y2       GEAR                     3
*USE  TEST2        SHIFT LOGIC
*USE  COCY2        CONVERTER
*USE  CODY2        CONVERTER
*USE  GM350M       ENGINE          1        1 2 3
*USE  LFANA        ACCESSORY
*USE  LPSA         ACCESSORY
*MODIFY            FUEL        0.740
*SIMULATE
```

Program VEHSIM utilizes the feature, available in the SCOPE 2.1 operating system for the CDC 7600 computer, of having all program variables preset to 0. If those variables are preset to indefinite, the default value in SCOPE 2.1, program execution is aborted. It is not known what results would be obtained on other computers or with other preset values.

6.3.3 VSIMI

In operation, Program VSIMI requires an input file (called TAPE5), a printer output file (TAPE6), a file (TAPE19) which contains the results of a VEHSIM run, and a file (TAPE29) which contains the detailed VSIMI results. With the SCOPE 2 operating system, the input file (TAPE5) for VSIMI must not be identical to the system INPUT file because the BACKSPACE command is utilized. Consequently, the INPUT file is copied to TAPE5, which is then rewound. Provision of an independent input file has the advantage that successive VSIMI runs using the same vehicle may be made in the same job submittal with only one input file.

Table 6-5 is an example of the control and input cards required to perform a single VSIMI run. The VEHSIM result file (TAPE19) and output result file (TAPE29) are again assumed to be permanent disc files. The VSIMI input cards define the selected input data format options, name the reference vehicle and define two of its parameters, and specify the carburetor and distributor engine maps. In Table 6-5, engine rotational speed is in terms of piston speed, carburetor data are expressed in terms of air-fuel ratio, the engine development is 350 cubic inches, and its stroke is 3.48 inches.

6.3.4 VSIMII

In operation, Program VSIMII requires an input file (TAPE4 which may be identical to the system INPUT file), a printer output file (TAPE6), a scratch input file (TAPE5), two VSIMI output tapes (TAPE29 and TAPE30), and a scratch printer output file (TAPE40). TAPE40 is used so

Table 6-5. Deck Setup for Program VSIMI

```
        ****     DECK SET UP FOR PROGRAM VSIMI     ****

              ****     SCOPE2.1 CONTROL CARDS     ****

REQUEST(TAPE29,*PF)               RESERVE PERMANENT FILE LOCATION
ATTACH(TAPE19,5TAPE19U)           PERMANENT FILE WITH VEHSIM OUTPUT TAPE
ATTACH(VSIMI,5VSIMI)              PERMANENT FILE WITH VSIMI OBJECT CODE
COPYS(INPUT,TAPE5)                COPY INPUT CARD DECK ONTO SCRATCH FILE
REWIND(TAPE5)                       DESIGNATED AS TAPE5
VSIMI.                            LOAD AND EXECUTE PROGRAM VSIMI
CATALOG(TAPE29,5TAPE29U)          PRESERVE TAPE29 AS PERMANENT FILE

7/8/9 MULTIPLE PUNCH IN COLUMN 1  END OF RECORD CARD

              ****        VSIMI INPUT CARDS        ****

SCALE NO      349.8 3.480
*CARB               GM350       PISTON      BMEP        AFR
REFERENCE VEHICLE   GMC 350 CID 8 CYL-2BBL
DATA          350.        3.48
SPEED POINT   600.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   97.
CARB DATA     15.   15.   15.50 15.90 15.70 15.25 14.   12.80 12.50 13.
SPEED POINT   700.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   97.
CARB DATA     15.   15.   16.2  15.4  16.   15.2  13.9  12.8  12.6  13.0
SPEED POINT   800.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   104.
CARB DATA     15.4  15.40 16.50 16.50 16.2  15.3  14.1  13.1  12.7  13.2
SPEED POINT   1000.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   113.
CARB DATA     15.9  15.9  16.3  16.3  16.2  15.75 15.1  14.25 13.40 13.3
SPEED POINT   1200.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   114.
CARB DATA     16.25 16.25 15.8  15.8  15.75 15.7  15.3  14.7  13.7  13.3
SPEED POINT   1400.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   112.
CARB DATA     16.   16.   16.   15.7  15.7  15.6  15.25 14.7  13.8  13.5
SPEED POINT   1600.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   109.
CARB DATA     16.   16.   16.   15.8  15.7  15.7  15.4  14.7  13.7  13.7
SPEED POINT   1800.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   103.
CARB DATA     16.   16.   16.   16.0  16.0  16.   15.4  14.5  13.7  13.
SPEED POINT   2000.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   97.
CARB DATA     16.   16.   16.   16.   16.   16.   15.4  14.1  13.6  13.
SPEED POINT   2200.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   92.
CARB DATA     16.   16.   16.   16.   16.   16.   15.   13.8  13.   13.
*ENGINE TIMING      GM350       PISTON      BMEP        DEG
REFERENCE VEHICLE   GMC 350 CID 8 CYL-2BBL
DATA          350.        3.48
SPEED POINT   600.
LOAD POINT    1.    10.   30.   40.   50.   60.   70.   80.   90.   97.
```

Table 6-5. Deck Setup for Program VSIMI (Continued)

```
ADVANCE      21.    21.    20.9   19.4   16.8   13.5   10.    6.6    4.4    4.0
SPEED POINT 700.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    101.
ADVANCE      22.4   22.4   23.    22.    19.3   16.    12.4   9.2    7.4    7.0
SPEED POINT 800.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    105.
ADVANCE      24.2   24.2   25.1   24.1   22.    19.    15.3   12.2   10.    9.7
SPEED POINT 1000.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    112.
ADVANCE      29.0   29.0   29.9   29.6   28.0   25.7   22.3   18.7   15.2   13.0
SPEED POINT 1200.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    114.
ADVANCE      33.2   33.2   34.7   34.1   32.8   30.5   27.2   23.6   20.0   16.6
SPEED POINT 1400.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    112.
ADVANCE      36.    36.    36.4   35.9   34.3   32.    28.9   25.2   21.9   18.5
SPEED POINT 1600.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    108.
ADVANCE      37.    37.    38.2   37.8   36.2   33.8   30.3   26.9   23.5   20.6
SPEED POINT 1800.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    103.
ADVANCE      38.9   38.9   39.5   38.5   35.5   34.    31.    28.    25.    22.
SPEED POINT 2000.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    97.
ADVANCE      40.7   40.7   40.8   39.7   36.8   34.    31.2   29.7   26.    23.5
SPEED POINT 2200.
LOAD POINT   1.     10.    30.    40.    50.    60.    70.    80.    90.    92.
ADVANCE      42.    42.    42.7   40.8   38.    34.9   31.7   29.4   25.4   25.3
```

that a single printed output table can contain all results and be followed by separate tabulations of calibration curves and warning messages.

Table 6-6 is an example of the control and input cards required to perform a single VSIMII run. The VSIMII outputs (TAPE29 and TAPE30) are assumed to be permanent disc files. (Note that TAPE30 was originally created as a TAPE29 and that its logical file name is not preserved.)

Table 6-6. Deck Setup for Program VSIMII

```
            ****      SCOPE 2.1 CONTROL CARDS       ****

ATTACH(TAPE29,$TAPE29U)          VSIMI OUTPUT (URBAN CYCLE)
ATTACH(TAPE30,$TAPE29H)          VSIMI OUTPUT (HIGHWAY CYCLE)
ATTACH(VSIMII,$VSIMII)           PERMANENT FILE WITH VSIMII OBJECT CODE
VSIMII.                          LOAD AND EXECUTE PROGRAM VSIMII

7/8/9 MULTIPLE PUNCH IN COLUMN 1  END OF RECORD CARD

            ****        VSIMII INPUT CARDS         ****
            ****         (TWO SETS ONLY)           ****

    FTP-URBAN            FTP-HIGHWAY      350CID, AUTOMATIC, 5000LB. 38.8N/V
5000. 349.8 33.8  3.08  A
-.097 -.168 -.149 -.011
 .573  .624 -.141  .057
 .846  .913  .026 -.005
-.044 -.022  .018  .003
 .200
*DISTP            3228265
    2     22    24                                                      L-053 B
       2.87  3.34                                                       L-053 B
       37.9  44.4                                                       L-053 B
AMC          MATADOR        DS1-17R          F 360 4V A    4500
AMC          MATADOR WGN    DSR-39P          F 360 4V A    4500
ADVANCE      0.     6.     17.
ENGINE RPM   900.   1230.  4400.
ADVANCE      0.     15.    15.
VACUUM       5.     12.3   19.
*CARB               SF3227439      2.8
AFR          13.4   15.6   15.8   15.8   15.5   15.4
LBSAIR       2.     4.     5.     12.    13.    22.
*DISTP              3228265
    2     23    25                                                        L-054
       2.87  3.34                                                         L-054
       37.8  44.4                                                         L-054
AMC          MATADOR        DSR-18P          F 360 2V A    4500
AMC          MATADOR        DSR-26D(R)       F 360 2V A    4500
ADVANCE      0.     5.     17.
ENGINE RPM   900.   1230.  4400.
ADVANCE      0.     15.    15.
VACUUM       5.     12.3   19.
*CARB               SF3227441      2.1
AFR          14.2   15.3   15.5   16.
LBSAIR       2.     4.     10.    14.
```

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APPENDIX

VEHSIM PRINTOUT FOR 350 CID REFERENCE VEHICLE RUN

APPENDIX

VEHSIM PRINTOUT FOR 350 CID REFERENCE VEHICLE RUN

```
*****************************************************
*                                                   *
*             THE AEROSPACE CORPORATION             *
*        PO BOX 92957, LOS ANGELES, CA  90009       *
*                                                   *
*          INFORMATION PROCESSING DIVISION          *
*     J. M. CLIFFORD / A1-2009 / (213) 648-6046     *
*                                                   *
*             PERFORMED ON  10/01/76                *
*             BEGINNING AT  15.47.54                *
*                                                   *
*   VEHSIM, VSIMI                                   *
*   REF. VEH. B, 350 CID, AUTO, 5000 LB, 3.08 RAR   *
*                                                   *
*****************************************************
```

```
         S C O P E   L O A D   M A P                                  LOADER VERSION 1.0   10/01/76  15.48.10   PAGE   1
PROGRAM  WILL BE ENTERED AT  VEHSIM      ( 14545)                     SCM LENGTH    127234           LCM LENGTH         0

         BLOCK          ADDRESS     LENGTH

          /GET/             100         53
          /ENGMAP/          153       6341
          /LDIMEN/         6514         21
          /IO/             6535         34
          /ENDOF/          6571          2
          /OLDMAP/         6573       3151
          /CONST/         11744        147
          /CNTRL/         12113         10
          /MOCON/         12123         22
          /ACCESS/        12145       1536
          /TORCON/        13703        321
          /TMAP/          14224          4
          /MISC/          14230         25
          /V2MISC/        14255        116
         VEHSIM           14373        254
         ACCESR           14647         55
          /CONSHFT/       14724          3
          /RTE/           14727        476
          /DSCHED/        15425      55727
          /TRQRPM/        74354          6
          /SHFTL/         74362       2226
          /PRNLIM/        76610          6
          /VEHICLE/       76616         62
          /RUNID/         76700         14
          /OUTP/          76714         11
          /SEGNO/         76725          1
          /FBRAKE/        76726          1
          /CDEBUG/        76727         10
         CONTROL          76737       4230
         CONVTR          103167        175
         DEBUG           103364        114
          /DISK/         103500         25
         DSK             103525        606
         DSKRD           104333        616
         DSKWP           105151        547
         ENGINE          105720        655
         GCBACK          106575        256
          /CURVET/       107053        315
          /OLDIO/        107370          4
         INPUT           107374       4164
         MODSL           113560        144
         PRNOUT          113724        522
         PRNTPD          114446       2663
         READPD          117331        316
         REMAP           117647        247
         SCALEN          120116        143
         SHIFTS          120261        226
         ZERO            120507         66
          /Q8.IO./       120575        120
```

```
S C O P E   L O A D   M A P                                  LOADER VERSION 1.0   10/01/76  15.48.10   PAGE   2

FORSYS=      120715          624
BACKSP=      121541           46
 /IOCON./    121607           42
COMIO=       121651           55
DECODE=      121726          115
ENDFIL=      122043           45
EOF          122110           15
FLTIN=       122125          153
FLTOUT=      122300          313
FMTAP=       122613          365
GETFIT=      123200           35
INCOM=       123235          247
 /IO.BUF./   123504          227
INPB=        123733          313
INPC=        124246          200
KODER=       124446          471
KRAKER=      125137          442
OUTB=        125601          207
OUTC=        126010          173
OUTCOM=      126203          170
REWIND=      126373           35
CLOCK=       126430           50
GOTOER=      126500           14
ALOG         126514           77
ATAN         126613           70
EXP          126703          101
SINCOS=      127004           77
SQRT         127103           46
SYSAID=      127151            1
SYS=AID      127152           53
XTOY=        127225            7
```

```
VEHSIM CONTROL CARDS                              VERSION 1231     10/01/76
*********************

*TITLE      CASE B(A)   GMC 350, AUTO, 5000-LB CLASS, FTP URBAN, 3.08 IN
*PRINT UNITS      ENGINE      PISTON      BMEP        BSFC
*USE  V5000B      VEHICLE
*LIMIT PRINT      SEGMENT
*USE  LEVEL       ROUTE
*USE  UD0001      DRIVING SCHEDULE
*USE  T252Y2      GEAR                    1
*USE  T152Y2      GEAR                    2
*USE  T100Y2      GEAR                    3
*USE  TEST2       SHIFT LOGIC
*USE  CDCY2       CONVERTER
*USE  CODY2       CONVERTER
*USE  GM350M      ENGINE          1       1 2 3
*USE  LFANA       ACCESSORY
*USE  LPSA        ACCESSORY
*MODIFY           FUEL        0.742
*SIMULATE
*TITLE      CASE B(A)   GMC 350, AUTO, 5000-LB CLASS, FTP HIWAY, 3.08 IN
*USE  HD0002      DRIVING SCHEDULE
*SIMULATE
```

```
10/01/76                                    VEHICLE PERFORMANCE SIMULATION                                              PAG

                                   DRIVING SCHEDULE ( UDCCC1 )          USING ROUTE ( LEVEL  )

                                      INST          CUM
 SEC.     MILES    MPH    ACC     MPG    BSFC   MPG GEAR    ROLD     HPW     HPE    RPM   TORQ    VAC      SR     ETA  PCT.WOT
--------------------------------------------------------------------------------------------------------------------------------
  0.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  1.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  2.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  3.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  4.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  5.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  6.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  7.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  8.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
  9.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 10.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 11.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 12.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 13.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 14.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 15.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 16.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 17.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 18.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 19.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 20.00    0.000    0.0   0.00    0.00   6.86    0.0   1      0.0     0.0     .7    900.    4.   21.1   0.000   0.000     5.
 21.02     .000    3.0   4.40    1.71    .69     .1   1       .5     6.6   15.7    973.   85.   15.0    .286    .483    39.
 22.02     .002    5.9   4.25    2.89    .62     .3   1      1.1    12.6   20.2   1123.   95.   14.4    .483    .722    45.
 23.02     .004    8.6   3.96    3.77    .59     .6   1      1.6    17.3   24.0   1251.  101.   14.0    .639    .841    49.
 24.02     .006   11.5   4.25    4.07    .54    1.0   1      2.3    24.7   32.2   1452.  116.   12.4    .735    .886    54.
 25.02     .010   14.3   4.11    3.94    .52    1.3   2      3.0    29.7   43.3   1467.  153.    8.3    .539    .769    68.
 26.02     .014   16.9   3.81    4.53    .52    1.7   2      3.7    33.0   44.6   1541.  152.    8.2    .615    .825    67.
 27.01     .019   17.3    .59   10.93    .65    2.2   2      3.5     3.4   11.0   1095.   53.   18.0    .885    .901    28.
 28.02     .024   18.1   1.17    9.17    .70    2.6   2      4.0    13.7   17.4   1237.   74.   16.3    .819    .902    39.
 29.07     .030   20.7   3.81    4.50    .54    2.8   2      4.9    40.6   52.5   1687.  163.    7.4    .687    .867    71.
 30.07     .036   21.7   1.47    9.00    .60    3.1   2      5.2    19.7   34.9   1424.   92.   15.0    .524    .904    45.
 31.05     .042   22.4   1.03   10.65    .63    3.5   3      5.4    15.9   20.5   1222.   88.   15.1    .676    .861    44.
 32.03     .048   22.5    .15   16.12    .97    3.9   3      5.5     7.0    8.9    992.   47.   18.3    .836    .903    24.
 33.02     .054   22.1   -.59   34.17  46.62    4.3   3      5.4     -.5     .1    900.    0.   21.2    .905    .905     3.
 34.02     .060   21.5   -.89   46.34  99.99    4.8   3      5.6    -1.7   -1.3    900.   -7.   21.6    .880    .880     0.
 35.02     .066   20.9   -.88   45.05  99.99    5.2   3      5.4    -1.6   -1.3    900.   -7.   21.6    .856    .856     0.
 36.03     .072   20.4   -.73   43.97  99.99    5.6   3      5.0    -1.6   -1.3    900.   -7.   21.6    .835    .835     0.
 37.03     .077   19.8   -.88   42.69  99.99    6.0   3      5.0    -1.5   -1.3    900.   -7.   21.6    .811    .811     0.
 38.04     .082   17.0  -4.11   36.64  99.99    6.3   2      7.4    -1.9   -1.3    900.   -7.   21.5   1.058    .945     0.
 39.04     .087   14.9  -3.08   32.12  99.99    6.6   2      5.5    -1.7   -1.3    900.   -7.   21.6    .927    .927     0.
 40.04     .091   14.9   0.00   13.77   1.57    6.7   2      3.1     3.1    4.3    900.   25.   19.8    .927    .927    13.
 41.04     .095   15.2    .44   11.27   1.01    6.9   2      3.2     6.3    8.2    980.   44.   18.5    .869    .904    23.
 42.04     .098   15.5    .44   11.33   1.00    7.0   2      3.3     6.4    8.4    992.   45.   18.5    .875    .903    23.
 43.05     .104   16.0    .73   10.12    .86    7.1   2      3.4     8.7   11.3   1074.   55.   17.7    .835    .903    29.
 44.06     .108   17.1   1.61    7.98    .64    7.1   2      3.7    16.3   20.6   1270.   86.   15.3    .754    .892    43.
 45.06     .114   19.1   2.93    5.91    .52    7.0   2      4.3    29.6   36.4   1525.  132.   10.5    .701    .874    60.
```

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10/01/76                                   VEHICLE PERFORMANCE SIMULATION                                          PAG
--------                                   ------------------------------                                          ---

                              DRIVING SCHEDULE ( UDCC01 )          USING ROUTE ( LEVEL   )
                              ----------------                     -----------

   SEC.    MILES    MPH    ACC     INST    BSFC   CUM  GEAR    RDLD     HPW      HPE    RPM   TURQ    VAC      SR     ETA PCT.WOT
                                    MPG            MPG
-------------------------------------------------------------------------------------------------------------------------------------

  46.08    .119    21.1   2.93    6.04     .51   7.0    2       5.0    33.2     41.9  1612.   137.     9.8    .733    .887    62.
  47.08    .125    22.7   2.35    7.10     .53   7.0    2       5.6    29.9     37.3  1569.   123.    11.5    .800    .901    37.
  48.03    .131    22.9    .29   14.86     .87   7.2    3       5.6     8.6     10.9  1047.    55.    17.7    .806    .901    28.
  49.04    .138    22.7   -.29   22.22    1.77   7.4    3       5.6     2.6      3.6   900.    21.    20.1    .930    .930    11.
  50.02    .144    22.6   -.15   19.89    1.35   7.6    3       5.5     4.0      5.2   907.    30.    19.4    .919    .919    15.
  51.02    .150    21.3  -1.91   45.91   99.99   7.9    3       6.8    -1.6     -1.3   900.    -7.    21.6    .872    .872     0.
  52.02    .155    19.0  -3.37   40.95   99.99   8.1    3       7.6    -1.5     -1.3   900.    -7.    21.6    .778    .778     0.
  53.04    .161    17.1  -2.79   36.86   99.99   8.3    2       6.1    -2.0     -1.3   900.    -7.    21.6   1.064    .940     0.
  54.04    .165    15.8  -1.91   34.06   99.99   8.5    2       4.7    -1.8     -1.3   900.    -7.    21.9    .983    .983     0.
  55.04    .170    15.8   0.00   14.05    1.52   8.6    2       3.4     3.4      4.6   940.    25.    19.9    .941    .941    14.
  56.12    .175    17.7   2.79    5.99     .53   8.5    2       3.9    26.4     34.4  1457.   124.    11.5    .680    .864    57.
  57.12    .180    19.8   3.08    5.75     .51   8.4    2       4.5    32.3     41.4  1570.   139.     9.7    .706    .876    62.
  58.12    .186    21.6   2.64    6.54     .52   8.3    2       5.2    31.1     39.0  1582.   130.    10.7    .765    .894    59.
  59.12    .192    23.2   2.35    7.12     .53   8.2    2       5.7    30.6     36.2  1606.   125.    11.4    .803    .901    57.
  60.12    .198    24.2   1.47    9.36     .56   8.3    3       6.1    22.3     28.8  1359.   111.    13.0    .656    .851    53.
  61.11    .205    24.6    .59   13.11     .72   8.4    3       6.3    12.9     16.1  1173.    72.    16.4    .773    .896    37.
  62.11    .212    24.9    .44   14.05     .77   8.5    3       6.4    11.4     14.2  1145.    65.    17.0    .802    .901    34.
  63.09    .219    25.0    .15   16.43     .91   8.6    3       6.4     8.1     10.3  1062.    51.    18.1    .868    .904    27.
  64.09    .226    24.6   -.59   34.53   11.77   8.9    3       6.3     -.3       .4   900.     2.    21.1   1.007    .993     4.
  65.02    .232    24.5   -.15   20.08    1.27   9.0    3       6.2     4.6      5.9   976.    32.    19.5    .925    .925    18.
  66.06    .239    24.7    .29   15.13     .84   9.1    3       6.3     9.6     12.0  1096.    58.    17.6    .830    .903    30.
  67.04    .246    24.8    .15   16.41     .92   9.2    3       6.3     8.0     10.2  1056.    51.    18.1    .865    .904    27.
  68.01    .252    24.7   -.15   20.10    1.27   9.3    3       6.3     4.6      6.0   983.    32.    19.5    .926    .926    18.
  68.99    .259    24.6   -.15   20.09    1.27   9.5    3       6.3     4.6      6.0   980.    32.    19.5    .926    .926    18.
  69.99    .266    24.6   0.00   18.06    1.04   9.6    3       6.3     6.2      8.1  1007.    42.    18.7    .900    .900    23.
  71.03    .273    25.1    .73   12.47     .67   9.6    3       6.5    14.8     18.5  1223.    79.    15.8    .756    .892    41.
  72.03    .280    25.5    .73   12.56     .67   9.7    3       6.7    15.2     18.9  1235.    80.    15.3    .764    .894    41.
  73.01    .287    25.7    .15   16.51     .90   9.8    3       6.7     8.5     10.7  1081.    52.    18.3    .876    .903    23.
  74.01    .294    25.4   -.44   26.64    2.51   9.9    3       6.6     1.5      2.3   965.    13.    20.7    .970    .970    10.
  75.02    .301    24.9   -.73   43.27   99.99  10.1    3       6.6    -1.6     -1.0   900.    -6.    21.3   1.020    .981     1.
  76.09    .309    25.0    .15   16.43     .91  10.2    3       6.4     8.1     10.3  1062.    51.    18.1    .868    .904    27.
  77.10    .316    25.4    .59   13.23     .71  10.3    3       6.6    13.4     16.7  1196.    73.    16.4    .783    .898    38.
  78.10    .323    26.0    .88   11.95     .63  10.3    3       6.9    17.2     21.4  1283.    86.    15.2    .747    .889    44.
  79.10    .330    26.0   0.00   18.13    1.01  10.4    3       6.8     6.8      8.7  1056.    43.    18.7    .908    .908    24.
  80.10    .337    25.7   -.44   26.54    2.46  10.5    3       6.7     1.6      2.4   976.    13.    20.8    .970    .970    10.
  81.22    .345    26.1    .59   13.35     .70  10.6    3       6.9    13.9     17.2  1216.    74.    16.3    .791    .899    39.
  82.22    .353    26.7    .88   12.03     .62  10.6    3       7.1    17.8     22.1  1301.    89.    15.0    .757    .892    44.
  83.22    .360    27.5   1.17   10.87     .57  10.6    3       7.5    22.1     27.5  1386.   104.    13.7    .731    .885    50.
  84.22    .368    28.6   1.61    9.28     .53  10.6    3       7.9    28.9     36.1  1500.   127.    11.2    .703    .874    58.
  85.22    .376    29.3   1.03   11.67     .57  10.5    3       8.3    22.0     27.0  1401.   101.    14.0    .771    .896    49.
  86.23    .384    29.8    .73   13.13     .62  10.6    3       8.5    18.4     22.6  1352.    88.    15.2    .813    .902    44.
  87.23    .393    30.1    .44   14.78     .69  10.7    3       8.6    14.7     18.2  1288.    74.    16.3    .851    .904    39.
  88.23    .401    30.4    .44   14.83     .69  10.8    3       8.8    14.9     18.4  1296.    75.    16.3    .854    .904    39.
  89.23    .410    30.7    .44   14.85     .68  10.8    3       8.9    15.1     18.7  1304.    75.    16.2    .867    .904    39.
  90.23    .418    30.7   0.00   19.16     .93  10.9    3       8.9     8.0     11.2  1223.    48.    18.5    .925    .925    29.
  91.24    .427    30.5   -.29   22.41    1.34  11.0    3       8.8     4.8      6.3  1173.    28.    20.3    .959    .959    21.
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10/01/76                                          VEHICLE PERFORMANCE SIMULATION                                       PAG
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                                     DRIVING SCHEDULE ( UDC001 )           USING ROUTE ( LEVEL  )
                                     ----------------                      -----------

                               INST         CUM
   SEC.    MILES   MPH    ACC   MPG   BSFC  MPG GEAR    RDLD     HPW     HPE   RPM  TORQ   VAC     SR    ETA PCT.WOT
----------------------------------------------------------------------------------------------------------------------

   92.21   .435   30.4   -.15  20.13  1.10 11.1   3      8.8     6.7     8.5 1186.   37.  19.5   .943   .943    24.
   93.19   .443   30.3   -.15  20.14  1.10 11.2   3      8.7     6.7     8.4 1165.   37.  19.5   .943   .943    24.
   94.17   .451   30.4    .15  16.95   .82 11.3   3      8.8    10.9    13.6 1234.   58.  17.7   .908   .908    33.
   95.17   .460   30.8    .59  13.98   .64 11.3   3      9.0    17.2    21.2 1344.   83.  15.6   .844   .904    42.
   96.17   .468   30.4   -.59  28.24  4.05 11.5   3      8.8      .6     1.6 1155.    7.  21.6   .970   .970    12.
   97.17   .477   29.9   -.73  50.27 99.99 11.6   3      8.7    -1.2     -.3  900.   -2.  21.2  1.224   .817     2.
   98.16   .485   29.5   -.59  28.60  4.56 11.7   3      8.4      .4     1.4 1121.    7.  21.5   .970   .970    11.
   99.27   .494   29.8    .44  14.76   .70 11.8   3      8.5    14.5    17.9 1279.   74.  16.4   .858   .904    39.
  100.27   .502   30.3    .73  13.18   .61 11.8   3      8.7    18.8    23.1 1365.   89.  15.1   .818   .902    44.
  101.26   .511   30.7    .59  13.97   .64 11.8   3      8.9    17.2    21.2 1342.   83.  15.6   .843   .904    42.
  102.28   .520   30.9    .29  15.85   .73 11.9   3      9.0    13.1    16.5 1271.   68.  16.8   .896   .896    36.
  103.25   .528   31.0    .15  16.93   .81 11.9   3      9.1    11.2    14.0 1255.   59.  17.7   .911   .911    33.
  104.23   .536   30.9   -.15  20.12  1.09 12.0   3      9.0     6.9     8.7 1207.   38.  19.5   .943   .943    25.
  105.24   .545   30.4   -.73  50.93 99.99 12.2   3      8.9    -1.2     -.3  900.   -2.  21.2  1.245   .803     2.
  106.24   .553   29.8   -.88  44.23 99.99 12.3   3      8.9    -2.3    -1.3  900.   -7.  21.6  1.220   .819     0.
  107.31   .562   29.9    .15  16.78   .83 12.4   3      8.6    10.6    13.3 1216.   57.  17.8   .906   .906    32.
  108.31   .571   30.2    .44  14.90   .69 12.4   3      8.7    14.7    18.3 1291.   74.  16.3   .862   .904    39.
  109.32   .579   30.7    .73  13.22   .61 12.4   3      8.9    19.1    23.5 1376.   90.  15.1   .822   .903    45.
  110.32   .588   31.2    .73  13.27   .61 12.4   3      9.2    19.5    24.0 1389.   91.  15.0   .828   .903    45.
  111.32   .596   31.8    .88  12.56   .56 12.4   3      9.5    22.2    27.2 1440.   99.  14.3   .814   .902    48.
  112.32   .605   32.2    .59  14.10   .63 12.4   3      9.7    19.3    22.5 1384.   86.  15.4   .858   .904    43.
  113.33   .614   32.4    .29  16.00   .71 12.5   3      9.8    14.1    17.5 1324.   70.  16.7   .902   .902    37.
  114.34   .623   32.2   -.29  22.35  1.27 12.6   3      9.7     5.4     7.0 1236.   30.  20.2   .960   .960    22.
  115.34   .632   31.7   -.73  52.37 99.99 12.7   3      9.6    -1.0     -.1  900.   -1.  21.2  1.298   .770     3.
  116.34   .641   28.6  -4.55  61.65 99.99 12.8   3     14.7    -2.2    -1.3  900.   -7.  21.6  1.171   .854     0.
  117.34   .648   25.3  -4.84  54.53 99.99 12.9   3     13.0    -1.9    -1.3  900.   -7.  21.6  1.036   .965     0.
  118.34   .655   22.0  -4.84  47.42 99.99 13.0   3     11.0    -1.7    -1.3  900.   -7.  21.6   .901   .901     0.
  119.34   .660   18.7  -4.84  40.31 99.99 13.1   3      9.1    -1.4    -1.3  900.   -7.  21.6   .766   .766     0.
  120.35   .665   15.4  -4.84  33.19 99.99 13.2   2      7.3    -1.8    -1.3  900.   -7.  21.6   .959   .959     0.
  121.35   .669   12.1  -4.84  26.09 99.99 13.2   2      5.6    -1.4    -1.3  900.   -7.  21.6   .753   .753     0.
  122.35   .672    8.8  -4.84  18.97 99.99 13.2   2      4.0    -1.0    -1.3  900.   -7.  21.6   .548   .548     0.
  123.36   .674    5.5  -4.84  11.86 99.99 13.3   1      2.5    -1.0    -1.3  900.   -7.  21.6   .569   .568     0.
  124.36   .675    2.2  -4.84   4.74 99.99 13.2   1      1.0     -.4    -1.3  900.   -7.  21.6   .227   .227     0.
  125.36   .675    0.0  -3.23   0.00  6.86 13.2   1      0.0      .0      .7  900.    4.  21.1  -.000  -.000     5.
  126.36   .675    0.0   0.00   0.00  6.86 13.2   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  127.36   .675    0.0   0.00   0.00  6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  128.36   .675    0.0   0.00   0.00  6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  129.36   .675    0.0   0.00   0.00  6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  130.36   .675    0.0   0.00   0.00  6.96 12.9   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  131.36   .675    0.0   0.00   0.00  6.86 12.9   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  132.36   .675    0.0   0.00   0.00  6.86 12.8   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  133.36   .675    0.0   0.00   0.00  6.86 12.8   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  134.36   .675    0.0   0.00   0.00  6.86 12.7   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  135.36   .675    0.0   0.00   0.00  6.86 12.7   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  136.36   .675    0.0   0.00   0.00  6.86 12.6   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
  137.36   .675    0.0   0.00   0.00  6.86 12.6   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000     5.
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 10/01/76                              VEHICLE PERFORMANCE SIMULATION                                          PAG
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                          DRIVING SCHEDULE ( UDCCC1 )          USING ROUTE ( LEVEL   )
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                                           INST          CUM
    SEC.    MILES    MPH    ACC     MPG    BSFC   MPG GEAR   RDLD    HPW    HPE   RPM  TORQ   VAC     SR    ETA PCT.WOT
-------------------------------------------------------------------------------------------------------------------------
  138.36     .675    0.0   0.00    0.00    6.86  12.5   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  139.36     .675    0.0   0.00    0.00    6.86  12.5   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  140.36     .675    0.0   0.00    0.00    6.86  12.4   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  141.36     .675    0.0   0.00    0.00    6.86  12.4   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  142.36     .675    0.0   0.00    0.00    6.86  12.3   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  143.36     .675    0.0   0.00    0.00    6.86  12.3   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  144.36     .675    0.0   0.00    0.00    6.86  12.2   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  145.36     .675    0.0   0.00    0.00    6.86  12.2   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  146.36     .675    0.0   0.00    0.00    6.86  12.2   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  147.36     .675    0.0   0.00    0.00    6.86  12.1   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  148.36     .675    0.0   0.00    0.00    6.86  12.1   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  149.36     .675    0.0   0.00    0.00    6.86  12.0   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  150.36     .675    0.0   0.00    0.00    6.86  12.0   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  151.36     .675    0.0   0.00    0.00    6.86  11.9   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  152.36     .675    0.0   0.00    0.00    6.86  11.9   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  153.36     .675    0.0   0.00    0.00    6.86  11.8   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  154.36     .675    0.0   0.00    0.00    6.86  11.8   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  155.36     .675    0.0   0.00    0.00    6.86  11.7   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  156.36     .675    0.0   0.00    0.00    6.86  11.7   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  157.36     .675    0.0   0.00    0.00    6.86  11.7   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  158.36     .675    0.0   0.00    0.00    6.86  11.6   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  159.36     .675    0.0   0.00    0.00    6.86  11.6   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  160.36     .675    0.0   0.00    0.00    6.86  11.5   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  161.36     .675    0.0   0.00    0.00    6.86  11.5   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  162.36     .675    0.0   0.00    0.00    6.86  11.5   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  163.36     .675    0.0   0.00    0.00    6.86  11.4   1     0.0    0.0     .7   900.    4.  21.1  0.000  0.000     5.
  164.38     .676    3.3   4.84     .71     .64  11.3   1      .6    7.9   18.6  1026.   96.  14.1   .299   .500    44.
  165.38     .677    6.6   4.84    2.88     .57  11.2   1     1.2   15.9   24.7  1208.  107.  13.3   .507   .741    51.
  166.38     .680    9.9   4.84    3.51     .54  11.1   1     1.9   23.9   32.5  1401.  122.  11.8   .656   .851    56.
  167.38     .683   13.2   4.84    3.85     .52  11.0   1     2.7   32.0   41.0  1598.  135.  10.1   .767   .895    61.
  168.38     .687   16.5   4.84    3.09     .58  10.9   2     3.6   39.9   56.4  1643.  180.   5.8   .563   .788    77.
  169.38     .692   19.8   4.84    3.15     .60  10.7   2     4.6   48.2   64.2  1757.  192.   5.1   .631   .836    80.
  170.38     .698   22.2   3.52    5.21     .53  10.6   2     5.4   41.0   51.8  1712.  159.   7.5   .726   .883    67.
  171.38     .704   24.3   3.08    6.00     .51  10.5   2     6.2   40.2   50.1  1738.  151.   8.5   .783   .898    65.
  172.38     .711   25.8   2.20    7.37     .51  10.5   3     6.7   32.5   42.7  1526.  147.   8.8   .623   .831    65.
  173.38     .718   26.4    .88   11.90     .62  10.5   3     7.0   17.6   21.9  1293.   89.  15.1   .752   .891    44.
  174.38     .726   25.7  -1.03   55.40   99.99  10.6   3     7.4   -2.0   -1.3   900.   -7.  21.6  1.052   .950     0.
  175.38     .733   25.1   -.88   54.10   99.99  10.7   3     6.9   -1.9   -1.3   900.   -7.  21.6  1.028   .973     0.
  176.37     .739   24.7   -.59   34.59   11.45  10.7   3     6.3    -.3     .4   900.    2.  21.1  1.011   .989     4.
  177.48     .747   25.0    .44   14.07     .77  10.8   3     6.4   11.4   14.3  1147.   65.  17.0   .803   .901    34.
  178.49     .754   25.2    .29   15.20     .53  10.8   3     6.5    9.8   12.3  1110.   58.  17.5   .837   .903    31.
  179.50     .761   25.4    .29   15.23     .53  10.8   3     6.6    9.9   12.5  1115.   59.  17.5   .840   .903    31.
  180.50     .768   25.8    .59   13.33     .70  10.8   3     6.7   13.7   17.0  1207.   74.  16.3   .768   .899    33.
  181.54     .776   27.2   2.05    7.85     .51  10.8   3     7.3   32.7   42.0  1542.  143.   9.2   .650   .847    64.
  182.53     .783   26.5  -1.03   57.12   99.99  10.9   3     7.7   -2.0   -1.3   900.   -7.  21.5  1.085   .922     0.
  183.53     .790   24.0  -3.67   51.73   99.99  11.0   3    10.5   -1.8   -1.3   900.   -7.  21.6   .983   .983     0.
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10/01/76                          VEHICLE PERFORMANCE SIMULATION                              PAG

                    DRIVING SCHEDULE ( UDC001 )        USING ROUTE ( LEVEL  )

                                INST         CUM
   SEC.     MILES   MPH   ACC    MPG   BSFC  MPG GEAR    ROLD     HPW     HPE    RPM  TORQ   VAC     SR    ETA PCT.WOT
--------------------------------------------------------------------------------------------------------------------

  184.53     .797  22.7 -1.91  48.93  99.99 11.0   3      7.4    -1.7    -1.3   900.   -7.  21.6   .930   .930    0.
  185.53     .803  19.4 -4.44  41.32  99.99 11.1   3      9.5    -1.5    -1.3   900.   -7.  21.6   .794   .794    0.
  186.55     .808  17.7 -2.49  38.15  99.99 11.1   2      6.0    -2.0    -1.3   900.   -7.  21.6  1.102   .908    0.
  187.56     .813  17.2  -.73  29.92  99.99 11.2   2      4.0    -1.7    -1.0   900.   -6.  21.3  1.071   .934    1.
  188.68     .818  18.1  1.32   8.80    .67 11.2   2      4.0    14.9    15.0  1263.   79.  15.9   .903   .901   40.
  189.69     .823  18.6   .73  10.58    .81 11.2   2      4.2    10.4    13.4  1174.   60.  17.5   .887   .900   33.
  190.71     .829  20.0  2.05   7.51    .56 11.1   2      4.6    23.3    29.4  1443.  107.  13.4   .777   .897   51.
  191.72     .835  22.2  3.23   5.64    .51 11.0   2      5.4    38.0    47.9  1679.  150.   8.5   .741   .888   66.
  192.72     .841  24.5  3.37   5.21    .53 10.9   2      6.2    43.8    54.6  1776.  162.   7.3   .773   .896   70.
  193.72     .849  27.3  4.11   3.89    .60 10.8   2      7.4    58.5    72.5  1963.  194.   5.5   .779   .897   80.
  194.72     .857  30.5  4.69   3.49    .59 10.6   2      8.8    74.0    91.1  2146.  223.   3.4   .796   .900   89.
  195.72     .865  33.5  4.40   3.68    .59 10.4   2     10.4    77.5    95.1  2230.  224.   3.4   .842   .903   90.
  196.72     .875  36.2  3.96   3.05    .60 10.2   2     11.9    77.2    94.9  2291.  218.   3.9   .886   .901   88.
  197.69     .885  37.3  1.61   9.45    .50 10.2   3     12.6    39.9    48.3  1732.  146.   9.0   .794   .900   64.
  198.73     .896  39.3  2.93   5.39    .56 10.1   2     13.9    66.3    80.3  2383.  177.   7.3   .924   .924   75.
  199.69     .907  40.5  1.76   5.37    .53 10.0   3     14.7    47.1    56.7  1845.  161.   8.0   .809   .902   69.
  200.69     .918  42.1  2.35   5.93    .60 10.0   3     15.8    59.5    73.1  1961.  194.   5.5   .783   .898   80.
  201.69     .930  43.5  2.05   5.77    .58  9.9   3     16.9    57.4    69.6  1979.  183.   6.4   .812   .902   76.
  202.69     .942  45.1  2.35   5.72    .61  9.8   3     18.1    66.3    79.4  2064.  202.   4.9   .805   .901   82.
  203.69     .955  46.0  1.32  10.14    .50  9.8   3     18.9    46.4    56.0  1917.  153.   8.7   .854   .902   66.
  204.69     .968  46.8  1.17  10.68    .50  9.8   3     19.5    44.4    53.9  1921.  147.   9.4   .898   .898   64.
  205.69     .981  47.5  1.03  11.29    .51  9.8   3     20.1    42.4    51.1  1932.  139.  10.3   .906   .906   61.
  206.69     .994  47.5  0.00  17.83    .49  9.9   3     20.1    20.1    24.0  1835.   69.  16.7   .954   .954   33.
  207.70    1.008  47.3  -.29  20.48    .66 10.0   3     19.9    13.7    16.7  1803.   49.  18.2   .967   .967   31.
  208.67    1.020  47.2  -.15  19.19    .76 10.0   3     19.9    16.6    20.0  1811.   58.  17.5   .961   .961   34.
  209.69    1.034  47.0  -.29  20.54    .86 10.1   3     19.7    13.5    16.4  1791.   48.  18.3   .967   .967   31.
  210.69    1.047  47.0  0.00  17.90    .69 10.2   3     19.7    19.7    23.5  1816.   68.  16.7   .954   .954   38.
  211.69    1.060  47.0  0.00  17.90    .69 10.2   3     19.7    19.7    23.5  1816.   68.  16.7   .954   .954   38.
  212.69    1.073  47.0  0.00  17.90    .69 10.3   3     19.7    19.7    23.5  1816.   68.  16.7   .954   .954   38.
  213.69    1.086  47.0  0.00  17.90    .69 10.3   3     19.7    19.7    23.5  1816.   68.  16.7   .954   .954   38.
  214.70    1.099  47.2   .29  15.78    .60 10.4   3     19.9    26.1    30.9  1848.   88.  15.1   .941   .941   44.
  215.71    1.112  47.4   .29  15.76    .60 10.4   3     20.0    26.3    31.2  1855.   88.  15.1   .942   .942   45.
  216.71    1.126  47.9   .73  12.87    .53 10.4   3     20.5    36.4    43.4  1916.  119.  12.2   .922   .922   55.
  217.71    1.139  48.5   .88  11.99    .52 10.4   3     21.0    40.4    48.3  1931.  130.  11.2   .916   .916   58.
  218.71    1.153  49.1   .88  11.96    .52 10.5   3     21.5    41.2    49.1  1972.  131.  11.1   .918   .918   59.
  219.71    1.166  49.5   .59  13.60    .54 10.5   3     21.9    35.2    41.8  1963.  112.  12.9   .929   .929   52.
  220.71    1.180  50.0   .73  12.70    .53 10.5   3     22.4    39.0    46.3  1992.  122.  11.9   .925   .925   56.
  221.71    1.194  50.6   .88  11.86    .51 10.5   3     22.9    43.2    51.3  2024.  133.  10.9   .921   .921   59.
  222.71    1.208  51.0   .59  13.46    .53 10.5   3     23.3    37.0    43.7  2016.  114.  12.7   .932   .932   53.
  223.71    1.222  51.5   .73  12.57    .52 10.6   3     23.8    40.9    48.4  2047.  124.  11.8   .927   .927   57.
  224.71    1.237  52.2  1.03  11.07    .50 10.5   3     24.5    49.9    59.1  2094.  146.   9.9   .919   .919   64.
  225.71    1.251  53.2  1.47   7.99    .56 10.5   3     25.5    61.0    73.2  2165.  177.   7.1   .904   .904   74.
  226.71    1.266  54.1  1.32   8.82    .54 10.5   3     26.4    58.9    70.2  2187.  169.   7.9   .912   .912   72.
  227.71    1.281  54.6   .73  12.32    .52 10.5   3     27.0    45.1    53.0  2157.  120.  11.4   .933   .933   59.
  228.71    1.297  54.9   .44  13.98    .54 10.6   3     27.3    38.3    44.9  2143.  110.  13.1   .944   .944   52.
  229.69    1.312  55.0   .15  15.65    .59 10.6   3     27.4    31.1    36.5  2124.   90.  14.8   .954   .954   45.
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   10/01/76                                VEHICLE PERFORMANCE SIMULATION                                          PAG

                                  DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )

                                        INST          CUM
     SEC.     MILES     MPH     ACC      MPG   BSFC   MPG GEAR     RDLD      HPW      HPE   RPM   TORQ    VAC      SR    ETA PCT.WOT
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   230.67     1.326    54.9    -.15    17.45    .70  10.6    3      27.3     23.5     27.8  2099.   76.    16.5    .964   .964     39.
   231.67     1.342    54.6    -.44    19.68    .68  10.7    3      27.0     16.0     19.5  2074.   49.    18.1    .970   .970     32.
   232.67     1.357    54.6    0.00    16.57    .64  10.7    3      27.0     27.0     31.7  2098.   79.    15.7    .959   .959     43.
   233.68     1.372    54.9     .29    14.96    .56  10.8    3      27.2     34.4     40.3  2129.   99.    14.0    .949   .949     49.
   234.66     1.387    55.1     .44    13.96    .54  10.8    3      27.5     38.5     45.2  2151.  110.    13.1    .944   .944     52.
   235.67     1.403    55.5     .59    13.02    .53  10.8    3      27.9     42.8     50.1  2174.  121.    12.1    .941   .941     56.
   236.68     1.418    55.7     .29    14.88    .56  10.9    3      28.2     35.5     41.5  2162.  101.    13.9    .949   .949     47.
   237.68     1.434    56.1     .59    12.96    .52  10.9    3      28.6     43.6     51.0  2196.  122.    12.0    .941   .941     55.
   238.69     1.450    56.3     .29    14.82    .55  10.9    3      28.8     36.2     42.4  2184.  102.    13.9    .950   .950     50.
   239.69     1.465    56.6     .44    13.73    .54  10.9    3      29.2     40.5     47.3  2207.  113.    12.9    .945   .945     53.
   240.67     1.481    56.7     .15    15.43    .59  11.0    3      29.3     33.1     38.7  2186.   93.    14.6    .956   .956     47.
   241.67     1.496    56.7    0.00    16.15    .63  11.0    3      29.3     29.3     34.3  2176.   83.    15.4    .960   .960     43.
   242.68     1.512    56.5    -.29    17.93    .76  11.0    3      29.0     21.6     25.6  2147.   63.    17.1    .970   .970     37.
   243.68     1.528    56.5    0.00    16.20    .63  11.1    3      29.0     29.0     34.0  2169.   82.    15.4    .960   .960     43.
   244.68     1.544    56.5    0.00    16.20    .63  11.1    3      29.0     29.0     34.0  2169.   82.    15.4    .960   .960     43.
   245.68     1.559    56.5    0.00    16.20    .63  11.2    3      29.0     29.0     34.0  2169.   82.    15.4    .960   .960     43.
   246.68     1.575    56.5    0.00    16.20    .63  11.2    3      29.0     29.0     34.0  2169.   82.    15.4    .960   .960     43.
   247.68     1.591    56.5    0.00    16.20    .63  11.2    3      29.0     29.0     34.0  2169.   82.    15.4    .960   .960     43.
   248.66     1.606    56.4    -.15    17.05    .69  11.3    3      28.9     25.1     29.6  2155.   72.    16.3    .965   .965     40.
   249.66     1.622    56.1    -.44    19.01    .87  11.3    3      28.6     17.4     21.0  2131.   52.    17.9    .970   .970     33.
   250.66     1.637    55.8    -.44    19.13    .87  11.3    3      28.3     17.1     20.7  2120.   51.    18.0    .970   .970     33.
   251.65     1.653    55.1   -1.03    26.95   3.16  11.4    3      27.5      1.7      4.0  2093.   10.    21.8    .970   .970     19.
   252.66     1.668    54.6    -.73    22.44   1.26  11.5    3      27.0      8.6     11.7  2074.   30.    19.5    .970   .970     25.
   253.65     1.683    54.2    -.59    21.19   1.05  11.5    3      26.5     12.0     15.1  2059.   39.    18.9    .970   .970     23.
   254.66     1.698    54.0    -.29    18.85    .77  11.5    3      26.3     19.2     22.9  2054.   59.    17.4    .969   .969     35.
   255.66     1.713    53.7    -.44    20.14    .88  11.6    3      26.0     15.3     18.6  2040.   48.    18.2    .970   .970     31.
   256.64     1.728    53.6    -.15    17.85    .70  11.6    3      25.9     22.2     26.4  2050.   66.    16.5    .964   .964     35.
   257.64     1.743    53.9     .44    14.13    .54  11.6    3      26.2     37.0     43.4  2106.  108.    13.2    .943   .943     52.
   258.62     1.757    54.0     .15    15.79    .60  11.7    3      26.3     30.0     35.2  2088.   89.    14.9    .953   .953     45.
   259.60     1.772    54.1     .15    15.78    .60  11.7    3      26.4     30.1     35.4  2091.   89.    14.9    .953   .953     45.
   260.60     1.787    54.1    0.00    16.68    .64  11.7    3      26.4     26.4     31.1  2079.   79.    15.7    .959   .959     42.
   261.60     1.802    53.8    -.44    20.09    .88  11.8    3      26.1     15.3     18.7  2044.   48.    18.2    .970   .970     31.
   262.59     1.817    53.4    -.59    21.54   1.06  11.8    3      25.7     11.4     14.4  2028.   37.    19.0    .970   .970     28.
   263.59     1.832    53.0    -.59    21.71   1.07  11.8    3      25.3     11.1     14.0  2013.   37.    19.0    .970   .970     28.
   264.58     1.846    52.6    -.59    21.87   1.08  11.9    3      24.9     10.8     13.7  1998.   36.    19.1    .970   .970     27.
   265.59     1.861    52.1    -.73    23.30   1.43  11.9    3      24.4      7.1      9.7  1979.   26.    19.9    .970   .970     24.
   266.69     1.877    52.4     .44    14.33    .55  12.0    3      24.7     35.2     41.3  2050.  106.    13.4    .942   .942     51.
   267.68     1.891    52.0    -.59    22.04   1.10  12.0    3      24.3     10.3     13.2  1975.   35.    19.2    .970   .970     27.
   268.66     1.905    51.9    -.15    18.38    .71  12.0    3      24.2     20.6     24.5  1987.   65.    16.9    .963   .963     37.
   269.67     1.920    51.7    -.29    19.66    .79  12.1    3      24.0     17.2     20.6  1967.   55.    17.7    .968   .968     34.
   270.68     1.934    51.5    -.29    19.73    .79  12.1    3      23.8     17.0     20.4  1960.   55.    17.7    .968   .968     33.
   271.66     1.948    51.6     .15    16.21    .61  12.1    3      23.9     27.4     32.3  2000.   85.    15.2    .951   .951     43.
   272.67     1.963    51.8     .29    15.29    .57  12.1    3      24.1     30.9     36.4  2019.   95.    14.4    .945   .945     47.
   273.67     1.977    52.1     .44    14.36    .55  12.2    3      24.4     34.8     41.0  2039.  106.    13.5    .942   .942     50.
   274.66     1.992    52.5     .59    13.32    .53  12.2    3      24.8     38.9     45.8  2068.  116.    12.5    .936   .936     54.
   275.67     2.006    53.0     .73    12.45    .52  12.2    3      25.3     42.9     50.6  2101.  127.    11.6    .930   .930     58.
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10/01/76                                      VEHICLE PERFORMANCE SIMULATION                                          PAG
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                                   DRIVING SCHEDULE ( UDCC01 )          USING ROUTE ( LEVEL  )
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                                 INST            CUM
   SEC.    MILES    MPH    ACC    MPG    BSFC    MPG GEAR    RDLD     HPW     HPE    RPM   TORQ    VAC     SR     ETA PCT.WOT
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  276.67   2.021   53.5    .73   12.41    .52   12.2   3     25.9    43.6    51.4  2118.   127.   11.5   .931   .931    58.
  277.68   2.036   54.0    .73   12.37    .52   12.2   3     26.3    44.2    52.1  2136.   126.   11.5   .932   .932    58.
  278.68   2.051   54.9   1.32    8.73    .54   12.1   3     27.3    50.2    71.6  2215.   170.    7.5   .914   .914    72.
  279.68   2.067   55.4    .73   12.26    .51   12.1   3     27.8    46.2    54.2  2165.   130.   11.3   .935   .935    59.
  280.69   2.082   55.6    .29   14.99    .56   12.2   3     28.0    35.4    41.4  2159.   101.   13.9   .949   .949    49.
  281.69   2.098   56.0    .59   12.97    .52   12.2   3     28.5    43.5    50.9  2192.   122.   12.1   .941   .941    56.
  282.69   2.113   56.0   0.00   16.29    .64   12.2   3     28.5    28.5    33.4  2156.    82.   15.5   .960   .960    43.
  283.70   2.129   55.8   -.29   18.16    .76   12.2   3     28.3    20.9    24.5  2121.    62.   17.1   .970   .970    36.
  284.70   2.144   55.2   -.88   24.24   1.73   12.3   3     27.6     5.5     8.1  2097.    20.   20.5   .970   .970    23.
  285.70   2.160   54.5  -1.03   27.20   3.46   12.3   3     26.9     1.3     3.6  2070.     9.   21.9   .970   .970    19.
  286.70   2.175   53.6  -1.32   39.60  99.99   12.4   3     26.7    -5.5    -3.6  1846.   -10.   23.4  1.069   .936    11.
  287.70   2.189   52.5  -1.61   53.44  99.99   12.4   3     26.5   -11.9   -10.0  1803.   -29.   24.4  1.073   .932     4.
  288.70   2.204   51.5  -1.47   52.89  99.99   12.5   3     25.1    -9.3    -7.4  1754.   -22.   24.0  1.082   .924     7.
  289.70   2.218   51.5   0.00   17.29    .65   12.5   3     23.8    23.8    28.1  1982.    75.   16.1   .958   .958    40.
  290.70   2.232   51.5   0.00   17.29    .65   12.5   3     23.8    23.8    28.1  1982.    75.   16.1   .958   .958    40.
  291.69   2.247   51.1   -.59   22.31   1.14   12.6   3     23.4     9.7    12.5  1941.    34.   19.4   .970   .970    26.
  292.69   2.261   50.1  -1.47   36.94  99.99   12.6   3     23.9    -9.6    -7.7  1687.   -24.   24.1  1.094   .914     5.
  293.39   2.270   50.0   -.15   18.70    .73   12.6   3     22.4    18.9    22.6  1916.    62.   17.1   .962   .962    36.
  294.37   2.284   50.1    .15   16.38    .62   12.7   3     22.5    25.0    30.6  1945.    83.   15.4   .949   .949    43.
  295.34   2.298   50.0   -.15   18.70    .73   12.7   3     22.4    18.9    22.6  1916.    62.   17.1   .962   .962    36.
  296.34   2.311   49.6   -.59   22.90   1.19   12.7   3     22.0     8.7    11.3  1884.    31.   19.6   .970   .970    25.
  297.32   2.325   49.5   -.15   18.73    .74   12.7   3     21.9    18.5    22.1  1897.    61.   17.2   .962   .962    35.
  298.32   2.338   49.5   0.00   17.56    .67   12.8   3     21.9    21.9    26.0  1908.    72.   16.4   .956   .956    39.
  299.32   2.352   49.5   0.00   17.56    .67   12.8   3     21.9    21.9    26.0  1908.    72.   16.4   .956   .956    39.
  300.31   2.366   49.1   -.59   22.98   1.21   12.8   3     21.5     8.4    10.9  1865.    31.   19.7   .970   .970    25.
  301.32   2.379   48.6   -.73   25.06   1.66   12.9   3     21.1     5.0     7.2  1846.    20.   20.9   .970   .970    22.
  302.32   2.392   48.1   -.73   25.33   1.71   12.9   3     20.6     4.7     6.9  1827.    20.   21.0   .970   .970    21.
  303.32   2.406   47.2  -1.32   51.66  99.99   12.9   3     20.9    -7.4    -5.6  1554.   -19.   23.7  1.120   .893     6.
  304.32   2.419   46.1  -1.61   95.35  99.99   13.0   3     20.8   -12.3   -10.2  1504.   -36.   24.5  1.129   .885     0.
  305.32   2.432   45.0  -1.61   93.34  99.99   13.1   3     20.0   -11.6    -9.4  1449.   -34.   24.4  1.144   .874     0.
  306.32   2.444   43.8  -1.76   91.11  99.99   13.1   3     19.4   -10.8    -8.6  1391.   -33.   24.3  1.161   .862     0.
  307.32   2.456   42.6  -1.76   88.87  99.99   13.2   3     18.5   -10.0    -7.9  1334.   -31.   24.1  1.177   .850     0.
  308.33   2.468   41.5  -1.61   86.90  99.99   13.2   3     17.3    -9.4    -7.3  1283.   -30.   23.9  1.192   .839     0.
  309.33   2.479   40.3  -1.76   94.57  99.99   13.3   3     16.9    -8.7    -6.7  1229.   -28.   23.8  1.206   .829     0.
  310.33   2.490   38.5  -2.64   91.47  99.99   13.3   3     17.7    -6.4    -4.6  1124.   -23.   23.2  1.263   .792     0.
  311.33   2.501   37.0  -2.20   78.86  99.99   13.4   3     16.0    -4.6    -3.2  1030.   -16.   22.5  1.324   .755     0.
  312.33   2.511   35.2  -2.64   75.69  99.99   13.4   3     15.4    -2.7    -1.6   928.    -9.   21.8  1.398   .715     0.
  313.33   2.520   33.9  -2.05   72.85  99.99   13.5   3     13.3    -2.6    -1.3   900.    -7.   21.5  1.384   .722     0.
  314.33   2.530   32.5  -1.91   70.05  99.99   13.5   3     12.3    -2.5    -1.3   900.    -7.   21.5  1.331   .751     0.
  315.32   2.539   31.5  -1.47   67.90  99.99   13.5   3     10.9    -2.4    -1.3   900.    -7.   21.5  1.290   .775     0.
  316.32   2.547   30.6  -1.32   65.36  99.99   13.6   3     10.4    -2.3    -1.3   900.    -7.   21.5  1.253   .798     0.
  317.14   2.554   30.5   -.15   20.13   1.10   13.6   3      8.8     6.8     8.5  1192.    35.   19.5   .943   .943    25.
  318.14   2.562   30.0   -.73   50.40  99.99   13.6   3      8.8    -1.2     -.3   900.    -2.   21.2  1.223   .814     2.
  319.14   2.571   29.0  -1.47   62.51  99.99   13.7   3      9.6    -2.2    -1.3   900.    -7.   21.5  1.183   .842     0.
  320.14   2.579   27.5  -2.20   59.28  99.99   13.7   3     10.1    -2.1    -1.3   900.    -7.   21.5  1.126   .888     0.
  321.14   2.586   24.8  -3.36   53.46  99.99   13.7   3     11.4    -1.9    -1.3   900.    -7.   21.6  1.016   .985     0.
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10/01/76                                  VEHICLE PERFORMANCE SIMULATION                                         PAG
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                                  DRIVING SCHEDULE ( UDCC01 )          USING ROUTE ( LEVEL  )
                                  -----------------                    -----------
                                    INST          CUM
   SEC.      MILES    MPH    ACC     MPG    BSFC  MPG GEAR    RDLD     HPW      HPE    RPM  TORQ    VAC     SR    ETA PCT.WOT
-----------------------------------------------------------------------------------------------------------------------------

  322.14     2.592   21.5  -4.84   46.34   99.99 13.7   3     10.7    -1.7     -1.3   900.   -7.   21.6   .880   .880    0.
  323.14     2.598   20.1  -2.05   43.32   99.99 13.8   3      6.5    -1.5     -1.3   900.   -7.   21.6   .823   .823    0.
  324.14     2.603   19.1  -1.47   41.17   99.99 13.8   3      5.4    -1.5     -1.3   900.   -7.   21.6   .782   .782    0.
  325.14     2.609   18.5   -.86   39.48   99.99 13.8   3      4.6    -1.4     -1.3   900.   -7.   21.6   .758   .758    0.
  326.12     2.613   17.0  -2.20   36.64   99.99 13.8   2      5.5    -1.9     -1.3   900.   -7.   21.6  1.058   .945    0.
  327.12     2.618   15.5  -2.20   33.41   99.99 13.8   2      4.9    -1.6     -1.3   900.   -7.   21.6   .965   .965    0.
  328.12     2.622   12.5  -4.40   26.94   99.99 13.8   2      5.5    -1.4     -1.3   900.   -7.   21.6   .778   .778    0.
  329.12     2.625   10.8  -2.49   23.28   99.99 13.8   2      3.4    -1.2     -1.3   900.   -7.   21.6   .672   .672    0.
  330.12     2.628    8.0  -4.11   17.24   99.99 13.9   2      3.3     -.9     -1.3   900.   -7.   21.6   .498   .498    0.
  331.13     2.629    4.7  -4.64   10.13   99.99 13.9   1      2.1     -.9     -1.3   900.   -7.   21.6   .485   .485    0.
  332.13     2.630    1.4  -4.94    3.02   99.99 13.8   1       .6     -.3     -1.3   900.   -7.   21.5   .144   .144    0.
  333.13     2.630    0.0  -2.05    0.00    6.86 13.8   1      0.0      .0       .7   900.    4.   21.1  -.000  -.000    5.
  334.13     2.630    0.0   0.00    0.00    6.86 13.8   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  335.13     2.630    0.0   0.00    0.00    6.86 13.8   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  336.13     2.630    0.0   0.00    0.00    6.86 13.8   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  337.13     2.630    0.0   0.00    0.00    6.86 13.8   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  338.13     2.630    0.0   0.00    0.00    6.86 13.8   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  339.13     2.630    0.0   0.00    0.00    6.86 13.7   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  340.13     2.630    0.0   0.00    0.00    6.86 13.7   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  341.13     2.630    0.0   0.00    0.00    6.86 13.7   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  342.13     2.630    0.0   0.00    0.00    6.86 13.7   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  343.13     2.630    0.0   0.00    0.00    6.86 13.7   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  344.13     2.630    0.0   0.00    0.00    6.86 13.7   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  345.13     2.630    0.0   0.00    0.00    6.86 13.7   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  346.13     2.630    0.0   0.00    0.00    6.86 13.6   1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000    5.
  347.13     2.631    1.0   1.47     .87    1.29 13.6   1       .2      .8      5.5   900.   32.   19.2   .103   .187   16.
  348.13     2.632    4.3   4.84    2.12     .62 13.6   1       .8    10.3     20.3  1087.   98.   14.0   .368   .589   46.
  349.13     2.633    7.6   4.84    3.11     .56 13.6   1      1.4    18.3     27.1  1266.  112.   12.9   .557   .784   53.
  350.13     2.636   10.9   4.84    3.65     .53 13.5   1      2.1    26.4     34.6  1460.  125.   11.4   .693   .870   58.
  351.13     2.639   14.2   4.84    3.89     .52 13.5   1      2.9    34.5     44.0  1661.  139.    9.7   .794   .900   62.
  352.13     2.643   17.3   4.55    3.43     .57 13.4   2      3.8    39.7     54.5  1539.  175.    6.3   .591   .809   75.
  353.13     2.649   20.0   3.96    4.25     .55 13.3   2      4.6    40.7     53.0  1678.  166.    7.1   .668   .857   71.
  354.13     2.654   22.5   3.67    4.71     .54 13.3   2      5.5    43.1     54.5  1740.  165.    7.4   .724   .882   71.
  355.19     2.661   23.7   1.76    8.39     .53 13.3   3      5.9    24.9     32.7  1397.  123.   11.7   .625   .832   57.
  356.19     2.667   25.2   2.20    7.35     .51 13.2   3      6.5    31.7     41.7  1510.  145.    9.0   .615   .826   65.
  357.19     2.675   26.6   2.05    7.81     .51 13.2   3      7.1    31.9     41.2  1525.  142.    9.4   .643   .843   63.
  358.19     2.683   28.1   2.20    7.32     .52 13.2   3      7.7    35.6     46.0  1590.  152.    8.1   .651   .848   67.
  359.20     2.691   30.0   2.79    6.27     .51 13.1   2      8.6    46.7     57.7  1922.  158.    6.5   .874   .903   69.
  360.17     2.699   30.8   1.17   11.12     .55 13.1   3      9.0    28.4     31.1  1470.  111.   13.0   .772   .896   52.
  361.18     2.708   31.6   1.17   11.14     .55 13.1   3      9.4    26.2     32.1  1493.  113.   12.8   .730   .898   53.
  362.18     2.717   32.1    .73   13.35     .60 13.1   3      9.6    20.3     24.9  1413.   92.   14.9   .837   .903   46.
  363.18     2.726   32.8   1.03   11.92     .55 13.1   3     10.0    28.4     31.0  1499. [illegible]  13.3   .806   .901   52.
  364.18     2.735   33.6   1.17   11.17     .54 13.1   3     10.4    28.3     34.5  1549.  117.   12.3   .799   .900   55.
  365.18     2.745   34.5   1.32   10.54     .53 13.1   3     10.9    31.6     38.4  1503.  126.   11.2   .793   .900   59.
  366.16     2.754   34.6    .15   17.26     .75 13.1   3     11.0    13.3     16.4  1381.   62.   17.3   .923   .923   35.
  367.16     2.764   34.9    .44   15.15     .63 13.1   3     11.2    16.1     22.5  1430.   82.   15.7   .899   .899   42.
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   10/01/76                                      VEHICLE PERFORMANCE SIMULATION                                           PAG

                                      DRIVING SCHEDULE ( UDC001 )         USING ROUTE ( LEVEL   )

                                         INST          CUM
    SEC.     MILES     MPH     ACC        MPG    BSFC   MPG GEAR     ROLD      HPW      HPE    RPM   TORQ    VAC      SR     ETA PCT.WOT
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   368.14    2.773    34.8    -.15     20.23     .98  13.1    3      11.1      8.7     10.9  1351.    42.   19.1    .949    .949     27.
   369.14    2.783    34.5    -.44     24.99    1.55  13.2    3      10.9      4.0      5.5  1310.    22.   20.9    .970    .970     20.
   370.19    2.793    34.7     .29     16.19     .69  13.2    3      11.0     15.6     19.3  1464.    72.   16.5    .911    .911     39.
   371.22    2.803    35.5    1.17     11.17     .53  13.2    3      11.5     30.4     36.9  1561.   121.   11.3    .817    .902     56.
   372.22    2.813    36.0     .73     13.50     .57  13.2    3      11.8     23.7     29.0  1522.   100.   14.3    .872    .903     49.
   373.22    2.823    36.0    0.00     18.67     .82  13.2    3      11.8     11.8     14.5  1411.    54.   18.0    .941    .941     32.
   374.22    2.833    36.0    0.00     18.67     .82  13.2    3      11.8     11.8     14.5  1411.    54.   18.0    .941    .941     32.
   375.22    2.843    36.0    0.00     18.67     .82  13.2    3      11.8     11.8     14.5  1411.    54.   18.0    .941    .941     32.
   376.22    2.853    36.0    0.00     18.67     .82  13.2    3      11.8     11.8     14.5  1411.    54.   18.0    .941    .941     32.
   377.22    2.863    36.0    0.00     18.67     .82  13.2    3      11.8     11.8     14.5  1411.    54.   18.0    .941    .941     32.
   378.20    2.873    36.1     .15     17.34     .73  13.2    3      11.9     14.3     17.6  1436.    64.   17.2    .926    .926     35.
   379.20    2.883    36.4     .44     15.20     .62  13.2    3      12.0     19.3     23.8  1482.    84.   15.5    .905    .905     43.
   380.18    2.893    36.5     .15     17.35     .73  13.3    3      12.1     14.6     17.9  1451.    65.   17.1    .927    .927     35.
   381.16    2.902    36.4    -.15     20.24     .94  13.3    3      12.0      9.6     11.8  1410.    44.   18.6    .951    .951     28.
   382.15    2.912    36.0    -.59     27.39    2.29  13.3    3      11.8      2.1      3.5  1367.    14.   21.6    .970    .970     17.
   383.15    2.922    35.1   -1.32     75.51   99.99  13.3    3      12.5     -2.6     -1.6   922.    -9.   21.8   1.403    .713      0.
   384.15    2.932    34.1   -1.47     73.50   99.99  13.4    3      12.3     -2.6     -1.3   900.    -7.   21.6   1.396    .716      0.
   385.15    2.941    33.5    -.83     72.21   99.99  13.4    3      10.8     -2.6     -1.3   900.    -7.   21.6   1.372    .729      0.
   386.15    2.950    31.4   -3.08     67.68   99.99  13.4    3      13.9     -2.4     -1.3   900.    -7.   21.6   1.286    .778      0.
   387.15    2.959    29.0   -3.52     62.51   99.99  13.5    3      13.2     -2.2     -1.3   900.    -7.   21.6   1.188    .842      0.
   388.15    2.966    25.7   -4.84     55.40   99.99  13.5    3      13.3     -2.0     -1.3   900.    -7.   21.6   1.052    .950      0.
   389.15    2.973    23.0   -3.96     49.58   99.99  13.5    3      10.4     -1.8     -1.3   900.    -7.   21.6    .942    .942      0.
   390.15    2.979    20.3   -3.96     43.76   99.99  13.5    3       8.9     -1.6     -1.3   900.    -7.   21.6    .831    .831      0.
   391.16    2.984    17.5   -4.11     37.72   99.99  13.6    2       7.7     -2.0     -1.3   900.    -7.   21.6   1.089    .918      0.
   392.16    2.989    14.5   -4.40     31.25   99.99  13.6    2       6.5     -1.7     -1.3   900.    -7.   21.6    .903    .903      0.
   393.16    2.992    12.0   -3.67     25.97   99.99  13.6    2       4.7     -1.4     -1.3   900.    -7.   21.6    .747    .747      0.
   394.16    2.995     8.7   -4.84     18.75   99.99  13.6    2       4.0     -1.0     -1.3   900.    -7.   21.6    .542    .542      0.
   395.17    2.997     5.4   -4.84     11.64   99.99  13.6    1       2.4     -1.0     -1.3   900.    -7.   21.6    .557    .557      0.
   396.17    2.998     2.1   -4.84      4.53   99.99  13.6    1        .9      -.4     -1.3   900.    -7.   21.6    .217    .217      0.
   397.17    2.999     0.0   -3.08      0.00    6.86  13.6    1       0.0       .0       .7   900.     4.   21.1   -.000   -.000      5.
   398.17    2.999     0.0    0.00      0.00    6.86  13.6    1       0.0      0.0       .7   900.     4.   21.1   0.000   0.000      5.
   399.17    2.999     0.0    0.00      0.00    6.86  13.5    1       0.0      0.0       .7   900.     4.   21.1   0.000   0.000      5.
   400.17    2.999     0.0    0.00      0.00    6.86  13.5    1       0.0      0.0       .7   900.     4.   21.1   0.000   0.000      5.
   401.17    2.999     0.0    0.00      0.00    6.86  13.5    1       0.0      0.0       .7   900.     4.   21.1   0.000   0.000      5.
   402.17    2.999     0.0    0.00      0.00    6.86  13.5    1       0.0      0.0       .7   900.     4.   21.1   0.000   0.000      5.
   403.18    2.999     2.6    3.81      1.67     .75  13.5    1        .5      5.0     12.8   904.    74.   15.8    .267    .456     33.
   404.18    3.000     5.9    4.84      2.66     .58  13.5    1       1.1     14.2     23.5  1174.   105.   13.5    .467    .701     50.
   405.18    3.002     9.2    4.84      3.41     .54  13.4    1       1.8     22.2     30.9  1356.   120.   12.1    .630    .835     56.
   406.18    3.005    12.5    4.84      3.79     .52  13.4    1       2.5     30.3     39.1  1558.   132.   10.5    .745    .889     60.
   407.18    3.009    15.8    4.84      3.06     .58  13.3    2       3.4     38.2     54.9  1618.   178.    5.9    .547    .776     75.
   408.18    3.014    19.1    4.84      3.15     .60  13.3    2       4.3     46.5     62.5  1727.   190.    5.2    .619    .829     80.
   409.18    3.020    22.4    4.84      3.19     .61  13.2    2       5.4     54.8     70.7  1857.   200.    4.7    .676    .861     82.
   410.18    3.026    25.0    3.81      4.40     .57  13.1    2       6.4     49.8     62.1  1846.   177.    6.7    .759    .893     74.
   411.18    3.033    25.6     .88     11.86     .63  13.1    3       6.7     16.9     21.1  1273.    87.   15.2    .741    .868     44.
   412.23    3.041    27.5    2.79      6.42     .50  13.1    2       7.5     42.4     52.5  1426.   151.    8.3    .844    .904     66.
   413.23    3.049    29.0    2.20      7.29     .52  13.1    3       8.1     37.1     47.3  1614.   154.    8.0    .662    .854     67.
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10/01/76                               VEHICLE PERFORMANCE SIMULATION                                          PAG
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                              DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )
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                                    INST         CUM
  SEC.    MILES    MPH    ACC       MPG   BSFC   MPG GEAR   RDLD    HPW    HPE   RPM  TORQ   VAC     SR    ETA PCT.WOT
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 414.23   3.057   30.0   1.47      9.84    .53  13.1   3      8.6   28.6   35.4  1512.  123.   11.6   .731   .885    57.
 415.20   3.065   30.1    .15     16.81    .82  13.1   3      8.6   10.7   13.4  1223.   58.   17.8   .907   .907    32.
 416.18   3.074   30.0   -.15     20.16   1.11  13.1   3      8.6    6.6    8.3  1174.   37.   19.5   .942   .942    24.
 417.18   3.082   29.7   -.44     25.46   1.98  13.1   3      8.5    2.5    3.6  1126.   17.   20.9   .970   .970    15.
 418.18   3.090   29.3   -.59     28.69   4.69  13.1   3      8.3     .4    1.3  1113.    6.   21.5   .970   .970    11.
 419.18   3.098   28.8   -.73     48.79  99.99  13.1   3      8.2   -1.3    -.5   900.   -3.   21.2  1.179   .848     2.
 420.18   3.106   28.0  -1.17     60.35  99.99  13.2   3      8.6   -2.1   -1.3   900.   -7.   21.6  1.147   .872     0.
 421.18   3.113   25.0  -4.40     53.89  99.99  13.2   3     12.2   -1.9   -1.3   900.   -7.   21.6  1.024   .977     0.
 422.18   3.120   21.7  -4.84     46.77  99.99  13.2   3     10.8   -1.7   -1.3   900.   -7.   21.6   .889   .889     0.
 423.18   3.125   18.4  -4.84     39.66  99.99  13.2   3      8.9   -1.4   -1.3   900.   -7.   21.5   .753   .753     0.
 424.19   3.130   15.1  -4.84     32.55  99.99  13.2   2      7.2   -1.7   -1.3   900.   -7.   21.6   .940   .940     0.
 425.19   3.134   11.8  -4.84     25.43  99.99  13.2   2      5.5   -1.3   -1.3   900.   -7.   21.5   .734   .734     0.
 426.19   3.137    8.5  -4.84     18.32  99.99  13.2   2      3.9   -1.0   -1.3   900.   -7.   21.6   .529   .529     0.
 427.20   3.139    5.2  -4.84     11.21  99.99  13.3   1      2.3   -1.0   -1.3   900.   -7.   21.6   .537   .537     0.
 428.20   3.140    1.9  -4.84      4.10  99.99  13.2   1       .8    -.4   -1.3   900.   -7.   21.5   .196   .196     0.
 429.20   3.140    0.0  -2.79      0.00   6.86  13.2   1      0.0     .0     .7   900.    4.   21.1  -.000  -.000     5.
 430.20   3.140    0.0   0.00      0.00   6.86  13.2   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 431.20   3.140    0.0   0.00      0.00   6.86  13.2   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 432.20   3.140    0.0   0.00      0.00   6.86  13.2   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 433.20   3.140    0.0   0.00      0.00   6.86  13.2   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 434.20   3.140    0.0   0.00      0.00   6.86  13.2   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 435.20   3.140    0.0   0.00      0.00   6.86  13.2   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 436.20   3.140    0.0   0.00      0.00   6.86  13.2   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 437.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 438.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 439.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 440.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 441.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 442.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 443.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 444.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 445.20   3.140    0.0   0.00      0.00   6.86  13.1   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 446.20   3.140    0.0   0.00      0.00   6.86  13.0   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 447.20   3.140    0.0   0.00      0.00   6.86  13.0   1      0.0    0.0     .7   900.    4.   21.1  0.000  0.000     5.
 448.22   3.140    3.3   4.84      1.71    .64  13.0   1       .6    7.9   18.8  1026.   96.   14.1   .299   .500    44.
 449.22   3.142    6.6   4.84      2.88    .57  13.0   1      1.2   15.9   24.7  1208.  107.   13.3   .507   .741    51.
 450.22   3.144    9.9   4.84      3.51    .54  13.0   1      1.9   23.9   32.5  1401.  122.   11.8   .656   .851    56.
 451.22   3.147   13.2   4.84      3.85    .52  12.9   1      2.7   32.0   41.0  1598.  135.   10.1   .767   .895    61.
 452.22   3.151   16.5   4.84      3.09    .58  12.9   2      3.6   39.9   56.4  1643.  180.    5.8   .563   .788    77.
 453.22   3.156   19.8   4.84      3.16    .60  12.8   2      4.6   48.2   64.2  1757.  192.    5.1   .631   .836    80.
 454.22   3.162   23.1   4.84      3.21    .61  12.7   2      5.7   56.6   72.4  1882.  202.    4.6   .688   .867    83.
 455.22   3.169   26.4   4.84      3.29    .61  12.7   2      7.0   65.2   81.6  2006.  214.    4.3   .737   .866    86.
 456.30   3.177   27.8   2.05      7.88    .51  12.6   3      7.6   33.5   42.6  1558.  144.    9.3   .653   .852    64.
 457.29   3.185   29.1   1.91      6.36    .51  12.6   3      8.2   33.4   42.1  1567.  141.    9.4   .684   .866    63.
 458.33   3.194   31.5   3.52      4.52    .58  12.6   2      9.3   59.6   73.6  2164.  187.    6.2   .855   .904    77.
 459.32   3.203   33.0   2.20      7.08    .54  12.5   3     10.1   43.1   53.4  1718.  163.    7.5   .708   .875    73.
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10/01/76                                      VEHICLE PERFORMANCE SIMULATION                                                 PAG

                                  DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )

                                 INST          CUM
  SEC.    MILES    MPH    ACC     MPG   BSFC   MPG GEAR    ROLD     HPW     HPE   RPM   TORQ    VAC     SR    ETA PCT.WOT
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 460.32   3.212   33.6    .68   12.62    .56  12.5   3     10.4    23.9    29.1  1486.  103.   14.0   .832   .903    50.
 461.34   3.222   34.8   1.76    8.98    .50  12.5   3     11.1    33.9    47.4  1690.  147.    8.3   .759   .893    65.
 462.34   3.231   35.1    .44   15.15    .63  12.5   3     11.3    19.3    22.7  1437.   83.   15.7   .900   .900    42.
 463.34   3.241   35.6    .73   13.50    .57  12.5   3     11.6    23.4    28.6  1511.   99.   14.4   .869   .904    48.
 464.35   3.251   36.1    .73   13.50    .57  12.5   3     11.9    23.8    29.1  1524.  100.   14.3   .873   .903    49.
 465.32   3.261   36.0   -.15   20.24    .95  12.5   3     11.8     5.3    11.6  1396.   44.   18.9   .951   .951    28.
 466.30   3.271   36.1    .15   17.34    .73  12.6   3     11.9    14.3    17.6  1436.   64.   17.2   .926   .926    35.
 467.28   3.281   36.2    .15   17.34    .73  12.6   3     11.9    14.4    17.6  1440.   64.   17.1   .926   .926    36.
 468.29   3.291   36.0   -.29   22.25   1.12  12.6   3     11.8     7.0     8.9  1379.   34.   19.8   .962   .962    24.
 469.29   3.301   35.7   -.44   24.70   1.47  12.6   3     11.6     4.5     6.1  1356.   23.   20.8   .970   .970    20.
 470.34   3.311   36.0    .44   15.19    .62  12.6   3     11.6    19.0    23.5  1469.   84.   15.5   .903   .903    43.
 471.34   3.321   36.0   0.00   18.57    .82  12.6   3     11.6    11.6    14.5  1411.   54.   18.0   .941   .941    32.
 472.33   3.331   35.6   -.59   27.46   2.37  12.6   3     11.6     2.0     3.4  1352.   13.   21.5   .970   .970    16.
 473.31   3.341   35.5   -.15   20.24    .96  12.7   3     11.5     9.1    11.3  1377.   43.   19.0   .950   .950    23.
 474.29   3.350   35.4   -.15   20.24    .96  12.7   3     11.4     9.0    11.2  1374.   43.   19.0   .950   .950    28.
 475.30   3.360   35.2   -.29   22.28   1.15  12.7   3     11.3     6.7     8.5  1349.   33.   19.9   .962   .962    24.
 476.30   3.370   35.2   0.00   18.62    .84  12.7   3     11.3    11.3    13.9  1382.   53.   18.1   .939   .939    31.
 477.30   3.380   35.2   0.00   18.62    .84  12.7   3     11.3    11.3    13.9  1382.   53.   18.1   .939   .939    31.
 478.30   3.390   35.2   0.00   18.62    .84  12.7   3     11.3    11.3    13.9  1382.   53.   18.1   .939   .939    31.
 479.30   3.399   35.2   0.00   18.62    .84  12.7   3     11.3    11.3    13.9  1382.   53.   18.1   .939   .939    31.
 480.30   3.409   35.2   0.00   18.62    .84  12.7   3     11.3    11.3    13.9  1382.   53.   18.1   .939   .939    31.
 481.31   3.419   35.0   -.29   22.29   1.15  12.8   3     11.2     6.6     8.4  1342.   33.   19.9   .962   .962    24.
 482.29   3.429   35.1    .15   17.20    .75  12.8   3     11.3    13.7    16.6  1400.   63.   17.3   .924   .924    35.
 483.27   3.438   35.2    .15   17.30    .74  12.8   3     11.3    13.7    16.9  1403.   63.   17.2   .924   .924    35.
 484.27   3.448   35.5    .44   15.17    .63  12.8   3     11.5    18.6    23.0  1451.   83.   15.7   .902   .902    42.
 485.27   3.458   35.2   -.44   24.83   1.50  12.8   3     11.3     4.3     5.6  1337.   23.   20.8   .970   .970    20.
 486.28   3.468   35.0   -.29   22.29   1.15  12.8   3     11.2     6.6     8.4  1342.   33.   19.9   .962   .962    24.
 487.28   3.477   35.0   0.00   18.61    .84  12.8   3     11.2    11.2    13.6  1375.   53.   18.1   .938   .938    31.
 488.28   3.487   35.0   0.00   18.61    .84  12.8   3     11.2    11.2    13.6  1375.   53.   18.1   .938   .938    31.
 489.29   3.497   34.8   -.29   22.22   1.16  12.9   3     11.1     6.5     8.3  1334.   33.   19.9   .961   .961    24.
 490.30   3.507   34.6   -.29   22.30   1.17  12.9   3     11.0     6.4     8.2  1327.   32.   20.0   .961   .961    23.
 491.28   3.516   34.5   -.15   20.23    .99  12.9   3     10.9     8.6    10.7  1340.   42.   19.1   .949   .949    27.
 492.28   3.525   33.5  -1.47   72.21  99.99  12.9   3     11.9    -2.6    -1.3   900.   -7.   21.5  1.372   .724     0.
 493.28   3.534   32.0  -2.20   58.98  99.99  12.9   3     12.5    -2.5    -1.3   900.   -7.   21.6  1.310   .763     0.
 494.28   3.543   30.1  -2.79   64.98  99.99  13.0   3     12.3    -2.3    -1.3   900.   -7.   21.6  1.233   .811     0.
 495.26   3.551   28.0  -3.08   60.35  99.99  13.0   3     11.8    -2.1    -1.3   900.   -7.   21.5  1.147   .872     0.
 496.28   3.559   25.5  -3.67   54.96  99.99  13.0   3     11.4    -2.0    -1.3   900.   -7.   21.6  1.044   .958     0.
 497.28   3.565   22.5  -3.40   48.50  99.99  13.0   3     10.7    -1.7    -1.3   900.   -7.   21.6   .921   .921     0.
 498.28   3.571   19.8  -3.96   42.68  99.99  13.0   3      8.7    -1.5    -1.3   900.   -7.   21.5   .811   .811     0.
 499.29   3.576   16.5  -4.84   35.57  99.99  13.1   2      7.0    -1.9    -1.3   900.   -7.   21.5  1.027   .974     0.
 500.29   3.580   13.2  -4.84   28.45  99.99  13.1   2      6.2    -1.5    -1.3   900.   -7.   21.5   .822   .822     0.
 501.29   3.584   10.3  -4.25   22.20  99.99  13.1   2      4.4    -1.2    -1.3   900.   -7.   21.6   .641   .641     0.
 502.30   3.586    7.2  -4.55   15.52  99.99  13.1   1      3.1    -1.4    -1.3   900.   -7.   21.5   .743   .743     0.
 503.30   3.588    4.0  -4.69    8.62  99.99  13.1   1      1.7     -.8    -1.3   900.   -7.   21.6   .413   .413     0.
 504.30   3.588    1.0  -4.40    2.15  99.99  13.1   1       .4     -.2    -1.3   900.   -7.   21.6   .103   .103     0.
 505.30   3.588    0.0  -1.47    0.00   6.86  13.1   1      0.0      .0      .7   900.    4.   21.1  -.000  -.000     0.
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   10/01/76                         VEHICLE PERFORMANCE SIMULATION                                              PAG
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                         DRIVING SCHEDULE ( UDC001 )           USING ROUTE ( LEVEL  )
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                                  INST          CUM
   SEC.    MILES    MPH    ACC     MPG   BSFC   MPG GEAR    ROLD    HPW    HPE   RPM  TORQ   VAC     SR    ETA PCT.WOT
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  506.30   3.588    0.0   0.00    0.00   6.86  13.1   1      0.0    0.0     .7   900.   4.  21.1  0.000  0.000    5.
  507.30   3.588    0.0   0.00    0.00   6.86  13.0   1      0.0    0.0     .7   900.   4.  21.1  0.000  0.000    5.
  508.30   3.588    0.0   0.00    0.00   6.86  13.0   1      0.0    0.0     .7   900.   4.  21.1  0.000  0.000    5.
  509.30   3.588    0.0   0.00    0.00   6.86  13.0   1      0.0    0.0     .7   900.   4.  21.1  0.000  0.000    5.
  510.30   3.588    0.0   0.00    0.00   6.86  13.0   1      0.0    0.0     .7   900.   4.  21.1  0.000  0.000    5.
  511.30   3.589    1.2   1.76    1.01   1.16  13.0   1       .2    1.2    6.3   900.  37.  18.9   .124   .222   18.
  512.30   3.589    3.5   3.37    2.28    .77  13.0   1       .6    6.0   12.4   914.  71.  16.1   .356   .575   32.
  513.30   3.591    5.5   2.93    3.41    .76  13.0   1      1.0    8.4   13.2   975.  71.  16.2   .524   .756   33.
  514.30   3.592    6.5   1.47    5.16   1.01  13.0   1      1.2    5.6    7.7   900.  45.  18.2   .671   .842   21.
  515.31   3.594    8.5   2.93    4.39    .68  12.9   1      1.6   13.0   17.6  1153.  80.  15.7   .685   .866   40.
  516.31   3.597    9.6   1.61    5.97    .84  12.9   1      1.9    8.9   11.6  1078.  57.  17.6   .827   .903   30.
  517.31   3.600   10.5   1.32    6.59    .68  12.9   1      2.0    8.4   11.2  1097.  54.  17.9   .889   .899   29.
  518.31   3.603   11.9   2.05    5.96    .65  12.9   2      2.4   13.5   19.1  1144.  88.  15.0   .583   .803   43.
  519.31   3.606   14.0   3.08    5.10    .54  12.9   2      2.9   22.5   31.7  1358. 123.  11.9   .578   .799   57.
  520.31   3.610   16.0   2.93    5.58    .53  12.9   2      3.4   24.8   33.3  1409. 124.  11.6   .636   .839   57.
  521.32   3.615   17.7   2.49    6.45    .55  12.8   2      3.9   24.0   31.0  1417. 115.  12.6   .700   .873   54.
  522.31   3.620   19.0   1.91    7.71    .58  12.8   2      4.3   20.6   26.4  1385. 100.  14.2   .769   .895   48.
  523.32   3.626   20.1   1.61    8.47    .60  12.8   2      4.7   19.4   24.5  1365.  93.  14.8   .813   .902   46.
  524.32   3.631   21.0   1.32    9.29    .63  12.8   2      5.0   17.6   22.2  1373.  85.  15.5   .857   .904   43.
  525.31   3.637   22.0   1.47    9.04    .60  12.8   2      5.3   20.0   25.2  1436.  92.  14.9   .858   .904   46.
  526.30   3.644   23.0   1.47    9.19    .56  12.8   3      5.7   21.0   27.5  1327. 109.  13.2   .639   .841   52.
  527.30   3.650   23.8   1.17   10.40    .59  12.8   3      6.0   13.6   23.8  1288.  97.  14.4   .681   .864   47.
  528.30   3.657   24.5   1.03   11.06    .61  12.8   3      6.2   17.7   22.4  1276.  92.  14.8   .707   .876   45.
  529.29   3.664   24.9    .59   13.15    .72  12.8   3      5.4   13.1   16.3  1181.  72.  16.4   .777   .897   38.
  530.27   3.670   25.0    .15   16.43    .91  12.8   3      6.4    8.1   10.3  1062.  51.  18.1   .869   .904   27.
  531.27   3.677   25.0   0.00   18.09   1.03  12.9   3      6.4    6.4    8.3  1021.  43.  18.7   .903   .903   23.
  532.27   3.684   25.0   0.00   18.09   1.03  12.8   3      6.4    6.4    8.3  1021.  43.  18.7   .903   .903   23.
  533.27   3.691   25.0   0.00   18.09   1.03  12.8   3      6.4    6.4    8.3  1021.  43.  18.7   .903   .903   23.
  534.27   3.698   25.0   0.00   18.09   1.03  12.8   3      6.4    6.4    8.3  1021.  43.  18.7   .903   .903   23.
  535.27   3.705   25.0   0.00   18.09   1.03  12.9   3      6.4    6.4    8.3  1021.  43.  18.7   .903   .903   23.
  536.31   3.712   25.6    .88   11.86    .63  12.8   3      6.7   16.9   21.1  1273.  87.  15.2   .741   .888   44.
  537.32   3.720   25.8    .29   15.27    .82  12.8   3      6.7   10.1   12.7  1126.  59.  17.5   .844   .904   32.
  538.34   3.727   26.0    .29   15.30    .82  12.8   3      6.8   10.3   12.4  1132.  60.  17.5   .846   .904   32.
  539.33   3.734   25.6   -.59   34.63   9.22  12.9   3      6.7    -.2     .5   900.   3.  21.1  1.048   .954    4.
  540.32   3.741   25.2   -.59   34.64  11.19  12.9   3      6.5    -.2     .4   900.   3.  21.1  1.032   .969    4.
  541.32   3.748   25.0   -.29   22.46   1.64  12.9   3      6.4    3.1    4.2   969.  23.  20.1   .951   .951   14.
  542.32   3.755   25.0   0.00   18.09   1.03  12.9   3      6.4    6.4    8.3  1021.  43.  18.7   .903   .903   23.
  543.32   3.762   25.0   0.00   18.09   1.03  12.9   3      6.4    6.4    8.3  1021.  43.  18.7   .903   .903   23.
  544.32   3.769   24.4   -.88   52.59  99.99  12.9   3      6.6   -1.9   -1.3   900.  -7.  21.6   .999   .999    0.
  545.32   3.775   23.1  -1.91   49.79  99.99  12.9   3      7.6   -1.8   -1.3   900.  -7.  21.6   .946   .940    0.
  546.32   3.781   19.8  -4.84   42.69  99.99  12.9   3      9.7   -1.5   -1.3   900.  -7.  21.6   .811   .811    0.
  547.33   3.786   16.5  -4.84   35.57  99.99  13.0   2      7.9   -1.9   -1.3   900.  -7.  21.6  1.027   .974    0.
  548.33   3.791   13.2  -4.84   28.45  99.99  13.0   2      6.2   -1.5   -1.3   900.  -7.  21.5   .822   .822    0.
  549.33   3.794    9.9  -4.84   21.34  99.99  13.0   2      4.5   -1.1   -1.3   900.  -7.  21.5   .616   .616    0.
  550.34   3.796    6.6  -4.84   14.23  99.99  13.0   1      3.0   -1.3   -1.3   900.  -7.  21.6   .691   .681    0.
  551.34   3.797    3.3  -4.84    7.11  99.99  13.0   1      1.5    -.6   -1.3   900.  -7.  21.5   .341   .341    0.
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 10/01/76                                  VEHICLE PERFORMANCE SIMULATION                                              PAG
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                              DRIVING SCHEDULE ( UDC001 )        USING ROUTE ( LEVEL   )
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                             INST        CUM
   SEC.    MILES   MPH   ACC   MPG   BSFC  MPG GEAR  RDLD   HPW   HPE   RPM  TORQ   VAC     SR    ETA PCT.WOT
----------------------------------------------------------------------------------------------------------------

  552.34   3.798   0.0 -4.84   0.00  6.86 13.0   1    0.0    .0    .7   900.   4.  21.1  -.000  -.000    5.
  553.34   3.798   0.0  0.00   0.00  6.86 13.0   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  554.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  555.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  556.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  557.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  558.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  559.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  560.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  561.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  562.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  563.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  564.34   3.798   0.0  0.00   0.00  6.86 12.9   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  565.34   3.798   0.0  0.00   0.00  6.86 12.8   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  566.34   3.798   0.0  0.00   0.00  6.86 12.8   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  567.34   3.798   0.0  0.00   0.00  6.86 12.8   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  568.34   3.798   0.0  0.00   0.00  6.86 12.8   1    0.0   0.0    .7   900.   4.  21.1  0.000  0.000    5.
  569.36   3.798   3.3  4.84   1.71   .64 12.8   1     .5   7.9  18.8  1026.  96.  14.1   .299   .500   44.
  570.36   3.800   6.6  4.84   2.89   .57 12.8   1    1.2  15.9  24.7  1208. 107.  13.3   .507   .741   51.
  571.36   3.802   9.9  4.84   3.51   .54 12.8   1    1.9  23.9  32.5  1401. 122.  11.8   .656   .851   55.
  572.36   3.805  13.0  4.55   4.02   .52 12.7   1    2.6  29.8  38.1  1562. 128.  11.0   .773   .896   59.
  573.39   3.809  14.6  2.35   6.19   .52 12.7   2    3.0  18.7  25.2  1263. 103.  13.8   .637   .840   50.
  574.39   3.813  16.0  2.05   6.96   .59 12.7   2    3.4  18.4  23.9  1294.  97.  14.4   .693   .870   47.
  575.39   3.818  17.0  1.47   8.25   .66 12.7   2    3.7  15.1  19.3  1243.  81.  15.7   .766   .895   41.
  576.39   3.823  17.0  0.00  14.29  1.46 12.7   2    3.7   3.7   5.0  1007.  26.  20.0   .946   .946   16.
  577.39   3.827  17.0  0.00  14.29  1.46 12.7   2    3.7   3.7   5.0  1007.  26.  20.0   .946   .946   16.
  578.41   3.832  17.5   .73  10.40   .63 12.7   2    3.9   9.7  12.5  1132.  58.  17.5   .869   .904   31.
  579.42   3.837  17.7   .29  12.50  1.07 12.7   2    3.9   6.3   8.2  1075.  40.  19.0   .922   .922   23.
  580.42   3.842  17.7  0.00  14.43  1.44 12.7   2    3.9   3.9   5.3  1044.  27.  20.0   .949   .949   17.
  581.43   3.847  17.5  -.29  17.52  2.47 12.7   2    3.9   1.5   2.5  1010.  13.  20.9   .970   .970   11.
  582.44   3.852  17.0  -.73  29.57 99.99 12.7   2    4.0  -1.7  -1.0   900.  -6.  21.3  1.059   .945    1.
  583.31   3.856  16.9  -.15  15.90  1.84 12.7   2    3.7   2.5   3.6   984.  19.  20.4   .962   .962   13.
  584.31   3.861  16.6  -.44  15.59  5.24 12.7   2    3.6    .3   1.0   958.   5.  21.1   .970   .970    7.
  585.34   3.865  17.0   .59  10.89   .90 12.7   2    3.7   8.3  10.8  1083.  52.  18.0   .879   .903   28.
  586.32   3.870  17.1   .15  13.28  1.22 12.7   2    3.7   4.9   6.5  1029.  33.  19.5   .931   .931   19.
  587.29   3.875  17.0  -.15  15.80  1.84 12.7   2    3.7   2.5   3.6   990.  19.  20.4   .962   .962   13.
  588.29   3.879  16.6  -.59  27.49 99.99 12.7   2    3.7   -.8   -.1   900.  -1.  21.2  1.033   .968    3.
  589.25   3.884  16.5  -.15  15.77  1.87 12.7   2    3.6   2.4   3.5   962.  19.  20.3   .961   .961   12.
  590.25   3.888  16.5  0.00  14.19  1.49 12.7   2    3.6   3.6   4.8   979.  26.  19.9   .944   .944   15.
  591.23   3.893  16.6   .15  13.19  1.24 12.7   2    3.6   4.7   6.3  1003.  33.  19.4   .927   .927   19.
  592.22   3.897  17.0   .59  10.89   .90 12.7   2    3.7   8.3  10.8  1083.  52.  18.0   .879   .903   23.
  593.22   3.902  17.6   .88   9.89   .78 12.7   2    3.9  10.9  14.1  1165.  63.  17.2   .847   .904   34.
  594.22   3.907  18.5  1.32   8.87   .66 12.7   2    4.2  15.3  19.4  1278.  80.  15.3   .811   .902   41.
  595.22   3.913  19.2  1.03   9.76   .71 12.7   2    4.4  13.4  17.1  1254.  71.  16.3   .857   .904   33.
  596.22   3.918  20.2  1.47   8.80   .62 12.7   2    4.7  18.2  23.0  1367.  88.  15.3   .828   .903   44.
  597.22   3.924  21.0  1.17   9.69   .65 12.7   2    5.0  16.2  20.5  1348.  80.  15.9   .873   .903   41.
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10/01/76                                      VEHICLE PERFORMANCE SIMULATION                                        PAC

                                    DRIVING SCHEDULE ( UDCC01 )        USING ROUTE ( LEVEL  )

                                   INST         CUM
   SEC.     MILFS    MPH    ACC     MPG   BSFC  MPG GEAR    ROLD     HPW     HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
---------------------------------------------------------------------------------------------------------------------------

 598.05     3.929   21.1    .15   15.90   1.00 12.7   3      5.0     6.4     8.2  954.   45.   18.3   .815   .902    23.
 599.03     3.934   21.2    .15   15.91   1.00 12.7   3      5.0     6.5     8.3  956.   45.   18.3   .817   .902    23.
 600.04     3.940   21.6    .59   12.52    .76 12.7   3      5.2    11.0    13.9 1096.   67.   16.9   .726   .883    34.
 601.03     3.946   22.0    .59   12.60    .76 12.7   3      5.3    11.2    14.2 1106.   67.   16.7   .733   .885    34.
 602.03     3.952   22.4    .59   12.68    .75 12.7   3      5.4    11.5    14.5 1117.   68.   16.7   .739   .887    35.
 603.01     3.959   22.5    .15   16.12    .97 12.7   3      5.5     7.0     8.9  992.   47.   18.3   .836   .903    24.
 604.01     3.965   22.5   0.00   17.91   1.10 12.7   3      5.5     5.5     7.1  939.   40.   18.8   .883   .902    20.
 605.01     3.971   22.5   0.00   17.91   1.10 12.7   3      5.5     5.5     7.1  939.   40.   18.8   .883   .902    20.
 606.03     3.978   22.7    .29   14.83    .88 12.7   3      5.6     8.5    10.8 1042.   54.   17.7   .803   .901    28.
 607.07     3.984   23.7   1.47    9.29    .56 12.7   3      5.9    21.8    28.2 1346.  110.   13.1   .649   .847    52.
 608.07     3.991   25.1   2.05    7.72    .51 12.7   3      6.5    29.9    39.2 1483.  139.    9.8   .624   .831    62.
 609.07     3.998   26.0   1.32   10.15    .56 12.7   3      6.8    22.4    28.2 1375.  108.   13.4   .697   .872    51.
 610.08     4.005   26.5    .73   12.71    .66 12.7   3      7.0    15.8    19.6 1259.   82.   15.6   .776   .897    42.
 611.08     4.013   27.0    .73   12.79    .65 12.7   3      7.2    16.2    20.1 1273.   83.   15.6   .782   .898    42.
 612.08     4.020   26.1  -1.32   56.26  99.99 12.7   3      8.0    -2.0    -1.3  900.   -7.   21.6  1.069   .936     0.
 613.08     4.027   22.3  -5.57   48.07  99.99 12.7   3     12.2    -1.7    -1.3  900.   -7.   21.6   .913   .913     0.
 614.08     4.033   19.5  -4.11   42.03  99.99 12.7   3      8.7    -1.5    -1.3  900.   -7.   21.6   .799   .799     0.
 615.09     4.038   16.2  -4.84   34.92  99.99 12.8   2      7.7    -1.9    -1.3  900.   -7.   21.6  1.008   .992     0.
 616.09     4.042   12.9  -4.64   27.81  99.99 12.6   2      6.0    -1.5    -1.3  900.   -7.   21.5   .603   .803     0.
 617.09     4.045    9.6  -4.84   20.69  99.99 12.8   2      4.4    -1.1    -1.3  900.   -7.   21.6   .598   .598     0.
 618.10     4.047    6.3  -4.84   13.58  99.99 12.8   1      2.8    -1.2    -1.3  900.   -7.   21.6   .650   .650     0.
 619.10     4.049    3.0  -4.84    6.47  99.99 12.8   1      1.3     -.6    -1.3  900.   -7.   21.6   .310   .310     0.
 620.10     4.049    0.0  -4.40    0.00   6.86 12.8   1      0.0      .0      .7  900.    4.   21.1  -.000  -.000     5.
 621.10     4.049    0.0   0.00    0.00   6.86 12.8   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 622.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 623.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 624.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 625.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 626.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 627.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 628.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 629.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 630.10     4.049    0.0   0.00    0.00   6.66 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 631.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 632.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 633.10     4.049    0.0   0.00    0.00   6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 634.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 635.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 636.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 637.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 638.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 639.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 640.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 641.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 642.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
 643.10     4.049    0.0   0.00    0.00   6.86 12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.
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   10/01/76                                 VEHICLE PERFORMANCE SIMULATION                                  PAC
   --------                                 ------------------------------                                  ---
                                 DRIVING SCHEDULE ( UDCC01 )          USING ROUTE ( LEVEL  )
                                 ----------------                     -----------
                                     INST           CUM
   SEC.     MILES    MPH    ACC      MPG    BSFC    MPG GEAR   RDLD    HPW    HPE   RPM  TORQ   VAC    SR    ETA PCT.WOT
------------------------------------------------------------------------------------------------------------------------
  644.10    4.049    0.0   0.00     0.00    6.86   12.6   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  645.10    4.049    0.0   0.00     0.00    6.86   12.6   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  646.11    4.049    2.0   2.93     1.46     .87   12.5   1      .3    3.0    9.7   900.   57.  17.3  .206   .359   26.
  647.10    4.050    4.5   3.67     2.60     .70   12.5   1      .8    8.4   15.2   993.   81.  15.4  .421   .652   33.
  648.11    4.052    7.8   4.84     3.15     .56   12.5   1     1.5   18.8   27.5  1278.  113.  12.8  .567   .791   53.
  649.11    4.054   10.2   3.52     4.38     .59   12.5   1     2.0   18.5   24.4  1311.   96.  14.3  .723   .882   48.
  650.11    4.057   12.5   3.37     4.52     .53   12.5   2     2.5   21.7   32.3  1337.  127.  11.3  .524   .756   58.
  651.11    4.061   14.0   2.20     6.29     .60   12.5   2     2.9   16.9   23.0  1240.   97.  14.3  .633   .837   47.
  652.11    4.065   15.3   1.91     7.05     .62   12.5   2     3.2   16.5   21.7  1248.   91.  14.9  .687   .867   45.
  653.12    4.070   17.5   3.23     5.36     .51   12.4   2     3.9   29.6   39.2  1503.  137.  10.0  .652   .849   62.
  654.12    4.075   19.6   3.08     5.74     .51   12.4   2     4.5   32.0   41.1  1562.  138.   9.8  .703   .874   62.
  655.12    4.081   21.0   2.05     7.60     .55   12.4   2     5.0   24.6   30.9  1483.  109.  13.2  .793   .900   52.
  656.12    4.087   22.2   1.76     8.35     .56   12.4   2     5.4   23.2   29.1  1487.  103.  14.0  .837   .903   50.
  657.11    4.093   23.3   1.61     8.79     .55   12.4   3     5.8   22.8   29.9  1360.  116.  12.5  .631   .836   54.
  658.11    4.100   24.5   1.76     8.46     .53   12.4   3     6.2   25.8   33.7  1419.  125.  11.5  .636   .839   57.
  659.11    4.106   25.3   1.17    10.63     .58   12.4   3     6.5   20.0   25.2  1327.  100.  14.1  .703   .874   48.
  660.11    4.114   25.6    .44    14.19     .76   12.4   3     6.7   11.8   14.6  1164.   66.  17.0  .811   .902   35.
  661.11    4.121   26.0    .59    13.33     .70   12.4   3     6.8   13.6   17.2  1213.   74.  16.3  .790   .899   39.
  662.08    4.128   26.1    .15    16.55     .89   12.4   3     6.9    9.6   10.9  1092.   53.  18.0  .881   .903   29.
  663.06    4.135   26.2    .15    16.55     .89   12.4   3     6.9    8.7   11.0  1095.   53.  18.0  .882   .903   28.
  664.06    4.142   26.2   0.00    18.13    1.01   12.4   3     6.9    6.9    8.6  1063.   44.  18.7  .909   .909   24.
  665.08    4.150   26.4    .29    15.34     .81   12.4   3     7.0   10.5   13.1  1143.   60.  17.4  .851   .904   32.
  666.05    4.157   26.5    .15    16.57     .88   12.4   3     7.0    8.8   11.2  1104.   53.  18.0  .885   .901   29.
  667.05    4.164   26.5   0.00    18.14    1.00   12.4   3     7.0    7.0    9.0  1073.   44.  18.7  .910   .910   25.
  668.06    4.171   26.0   -.73    44.87   99.99   12.4   3     7.0   -1.6    -.9   900.   -5.  21.3 1.065   .939    1.
  669.06    4.179   25.5   -.73    44.14   99.99   12.4   3     6.9   -1.6    -.9   900.   -5.  21.3 1.044   .958    1.
  670.06    4.185   23.6  -2.79    50.87   99.99   12.5   3     9.1   -1.6   -1.3   900.   -7.  21.5  .966   .966    0.
  671.06    4.192   21.4  -3.23    46.13   99.99   12.5   3     8.6   -1.6   -1.3   900.   -7.  21.6  .876   .876    0.
  672.06    4.197   18.5  -4.25    39.88   99.99   12.5   3     8.3   -1.4   -1.3   900.   -7.  21.6  .758   .758    0.
  673.08    4.202   16.4  -3.08    35.35   99.99   12.5   2     6.1   -1.9   -1.3   900.   -7.  21.6 1.021   .980    0.
  674.08    4.206   14.5  -2.79    31.25   99.99   12.5   2     5.1   -1.7   -1.3   900.   -7.  21.6  .903   .903    0.
  675.08    4.210   11.6  -4.25    25.00   99.99   12.5   2     5.0   -1.3   -1.3   900.   -7.  21.6  .722   .722    0.
  676.06    4.213    8.7  -4.25    18.75   99.99   12.5   2     3.7   -1.0   -1.3   900.   -7.  21.6  .542   .542    0.
  677.09    4.215    5.8  -4.25    12.50   99.99   12.5   1     2.4   -1.1   -1.3   900.   -7.  21.6  .599   .599    0.
  678.09    4.216    3.5  -3.37     7.54   99.99   12.5   1     1.2    -.7   -1.3   900.   -7.  21.6  .361   .361    0.
  679.09    4.217    2.0  -2.20     4.31   99.99   12.5   1      .6    -.4   -1.3   900.   -7.  21.5  .206   .206    0.
  680.09    4.217    0.0  -2.93     0.00    6.86   12.5   1     0.0     .0     .7   900.    4.  21.1 -.000  -.000    5.
  681.09    4.217    0.0   0.00     0.00    6.86   12.5   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  682.09    4.217    0.0   0.00     0.00    6.86   12.5   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  683.09    4.217    0.0   0.00     0.00    6.86   12.5   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  684.09    4.217    0.0   0.00     0.00    6.86   12.5   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  685.09    4.217    0.0   0.00     0.00    6.86   12.5   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  686.09    4.217    0.0   0.00     0.00    6.86   12.5   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  687.09    4.217    0.0   0.00     0.00    6.86   12.4   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  688.09    4.217    0.0   0.00     0.00    6.86   12.4   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
  689.09    4.217    0.0   0.00     0.00    6.86   12.4   1     0.0    0.0     .7   900.    4.  21.1 0.000  0.000    5.
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10/01/76                          VEHICLE PERFORMANCE SIMULATION                                   PAG
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                                DRIVING SCHEDULE ( UDC001 )        USING ROUTE ( LEVEL  )
                                ----------------                   -----------
                                     INST          CUM
   SEC.    MILES    MPH    ACC       MPG    BSFC   MPG GEAR    ROLD     HPW     HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
---------------------------------------------------------------------------------------------------------------------------

  690.09   4.217    0.0   0.00      0.00    6.86  12.4   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.
  691.09   4.217    0.0   0.00      0.00    6.86  12.4   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.
  692.09   4.217    0.0   0.00      0.00    6.86  12.4   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.
  693.09   4.217    0.0   0.00      0.00    6.86  12.4   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.
  694.09   4.217    1.4   2.05      1.14    1.06  12.4   1       .2     1.6     7.1  900.   42.   18.5   .144   .257     20.
  695.09   4.218    3.3   2.79      2.37     .86  12.4   1       .6     4.8    10.0  900.   59.   17.1   .341   .548     27.
  696.10   4.219    4.4   1.61      3.55    1.05  12.4   1       .8     4.0     7.3  900.   43.   16.4   .454   .650     20.
  697.10   4.221    6.5   3.08      3.69     .71  12.4   1      1.2    10.4    15.3 1049.   76.   15.8   .576   .798     37.
  698.10   4.223    9.2   3.96      3.90     .58  12.3   1      1.8    18.5    25.1 1288.  102.   13.8   .663   .855     49.
  699.09   4.226   11.3   3.08      4.70     .56  12.3   2      2.2    18.1    26.3 1263.  109.   13.1   .501   .735     52.
  700.09   4.229   13.5   3.23      4.84     .53  12.3   2      2.8    22.6    32.5 1359.  126.   11.5   .557   .783     59.
  701.10   4.233   14.6   1.61      7.42     .67  12.3   2      3.0    13.6    18.0 1176.   81.   15.7   .696   .871     41.
  702.11   4.237   16.4   2.64      6.05     .54  12.3   2      3.5    23.3    30.7 1390.  116.   12.5   .661   .853     54.
  703.11   4.242   16.7    .44     11.50     .97  12.3   2      3.6     7.0     9.2 1042.   47.   18.4   .898   .898     25.
  704.12   4.247   16.5   -.29     17.63    2.58  12.3   2      3.6     1.4     2.2  953.   12.   20.7   .970   .970      7.
  705.12   4.251   16.5   0.00     14.19    1.49  12.3   2      3.6     3.6     4.6  979.   26.   19.9   .944   .944     15.
  706.20   4.256   18.2   2.49      6.51     .54  12.3   2      4.1    24.7    31.6 1437.  116.   12.4   .709   .877     54.
  707.19   4.262   19.2   1.47      8.65     .63  12.3   2      4.4    17.2    21.6 1329.   86.   15.3   .809   .902     43.
  708.19   4.267   20.1   1.32      9.15     .64  12.3   2      4.7    16.7    21.2 1338.   83.   15.6   .842   .903     42.
  709.20   4.273   21.5   2.05      7.63     .55  12.3   2      5.1    25.2    31.6 1503.  111.   13.1   .801   .901     52.
  710.20   4.279   22.5   1.47      9.12     .56  12.3   3      5.5    20.5    27.0 1313.  108.   13.3   .632   .836     51.
  711.20   4.285   22.5   0.00     17.91    1.10  12.3   3      5.5     5.5     7.1  939.   40.   16.8   .883   .902     20.
  712.19   4.291   22.1   -.59     34.17   46.62  12.3   3      5.4     -.5      .1  900.    0.   21.2   .905   .905      3.
  713.33   4.298   22.7    .88     11.32     .66  12.3   3      5.6    14.6    18.6 1194.   82.   15.6   .700   .873     41.
  714.33   4.305   23.3    .88     11.44     .66  12.3   3      5.6    15.1    19.1 1211.   83.   15.5   .709   .877     42.
  715.34   4.311   23.5    .29     14.95     .86  12.3   3      5.8     8.9    11.3 1064.   56.   17.7   .814   .902     29.
  716.34   4.318   22.5  -1.47     48.50   99.99  12.3   3      6.7    -1.7    -1.3  900.   -7.   21.6   .921   .921      0.
  717.34   4.324   21.6  -1.32     46.55   99.99  12.3   3      6.2    -1.7    -1.3  900.   -7.   21.6   .885   .885      0.
  718.34   4.330   20.5  -1.61     44.19   99.99  12.3   3      6.1    -1.6    -1.3  900.   -7.   21.6   .839   .839      0.
  719.34   4.335   18.0  -3.67     38.80   99.99  12.3   3      7.4    -1.4    -1.3  900.   -7.   21.6   .737   .737      0.
  720.36   4.340   15.0  -4.40     32.33   99.99  12.3   2      6.7    -1.7    -1.3  900.   -7.   21.6   .934   .934      0.
  721.36   4.343   12.0  -4.40     25.87   99.99  12.3   2      5.3    -1.4    -1.3  900.   -7.   21.6   .747   .747      0.
  722.36   4.346    9.0  -4.40     19.40   99.99  12.3   2      3.9    -1.0    -1.3  900.   -7.   21.6   .560   .560      0.
  723.37   4.349    6.2  -4.11     13.35   99.99  12.3   1      2.5    -1.2    -1.3  900.   -7.   21.6   .640   .640      0.
  724.37   4.350    4.5  -2.49      9.70   99.99  12.3   1      1.4     -.8    -1.3  900.   -7.   21.6   .464   .464      0.
  725.37   4.351    3.0  -2.20      6.47   99.99  12.3   1       .9     -.6    -1.3  900.   -7.   21.6   .310   .310      0.
  726.37   4.352    2.1  -1.32      4.53   99.99  12.3   1       .5     -.4    -1.3  900.   -7.   21.6   .217   .217      0.
  727.37   4.352     .5  -2.35      1.08   99.99  12.3   1       .1     -.1    -1.3  900.   -7.   21.6   .052   .052      0.
  728.37   4.352     .5   0.00       .59    3.12  12.3   1       .1      .1     1.7  900.   10.   20.7   .052   .093      7.
  729.37   4.353    3.2   3.96      1.91     .71  12.3   1       .6     6.4    14.6  949.   81.   15.3   .313   .520     37.
  730.37   4.354    6.5   4.84      2.85     .57  12.3   1      1.2    15.6    24.5 1203.  107.   13.3   .502   .736     51.
  731.37   4.356    9.6   4.55      3.63     .55  12.3   1      1.8    21.9    29.9 1361.  115.   12.6   .653   .850     54.
  732.38   4.359   12.5   4.25      3.63     .51  12.3   2      2.5    26.7    41.5 1444.  151.    6.6   .485   .719     67.
  733.38   4.363   14.0   2.20      6.29     .60  12.3   2      2.9    16.9    23.0 1240.   97.   14.3   .633   .837     47.
  734.38   4.367   16.0   2.93      5.59     .53  12.2   2      3.4    24.8    33.3 1469.  124.   11.6   .636   .839     57.
  735.38   4.372   18.0   2.93      5.81     .52  12.2   2      4.0    28.0    36.5 1486.  129.   10.9   .679   .863     57.
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                       DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL   )

                                    INST           CUM
    SEC.    MILES    MPH    ACC      MPG   BSFC    MPG GEAR   RDLD     HPW     HPE    RPM  TORQ    VAC     SR    ETA PCT.WOT
-----------------------------------------------------------------------------------------------------------------------------
  736.38    4.377   19.6   2.35    6.90    .54  12.2   2     4.5    25.5    32.3  1471.  115.   12.5   .746   .889    54.
  737.38    4.383   21.5   2.79    6.28    .52  12.2   2     5.1    32.5    40.8  1596.  134.   10.2   .754   .891    61.
  738.38    4.389   23.1   2.35    7.11    .53  12.2   2     5.7    30.4    38.0  1604.  124.   11.4   .807   .901    57.
  739.37    4.396   24.5   2.05    7.69    .51  12.2   3     6.2    29.1    38.3  1466.  137.   10.0   .616   .826    62.
  740.37    4.403   25.5   1.47    9.51    .55  12.2   3     6.5    23.7    30.2  1393.  114.   12.7   .674   .861    53.
  741.37    4.410   26.5   1.47    9.61    .54  12.2   3     7.0    24.7    31.3  1419.  116.   12.5   .698   .868    54.
  742.37    4.417   27.1    .88   12.09    .62  12.2   3     7.3    18.1    22.5  1311.   90.   15.0   .762   .894    45.
  743.37    4.425   27.6    .73   12.87    .64  12.2   3     7.5    16.7    20.6  1290.   84.   15.5   .788   .899    42.
  744.37    4.433   27.9    .44   14.50    .72  12.2   3     7.6    13.2    16.4  1226.   70.   16.6   .839   .903    37.
  745.37    4.440   28.3    .59   13.69    .67  12.2   3     7.8    15.4    19.0  1277.   78.   16.0   .817   .902    40.
  746.37    4.448   28.6    .44   14.63    .72  12.2   3     7.9    13.7    16.9  1246.   71.   16.6   .846   .904    38.
  747.37    4.456   28.6   0.00   18.15    .97  12.2   3     7.9     7.9    10.0  1146.   46.   18.7   .920   .920    27.
  748.37    4.464   28.3   -.44   25.78   2.13  12.2   3     7.6     2.1     3.2  1075.   16.   20.9   .970   .970    14.
  749.35    4.472   28.2   -.15   20.23   1.16  12.2   3     7.8     5.8     7.4  1108.   35.   19.5   .938   .938    22.
  750.36    4.480   28.0   -.29   22.47   1.47  12.2   3     7.7     4.0     5.2  1080.   26.   20.2   .956   .956    18.
  751.36    4.487   27.5   -.73   46.99  99.99  12.2   3     7.7    -1.5     -.7   900.   -4.   21.2  1.126   .888     1.
  752.36    4.495   26.8  -1.03   57.77  99.99  12.2   3     7.9    -2.1    -1.3   900.   -7.   21.6  1.097   .911     0.
  753.36    4.502   25.5  -1.91   54.96  99.99  12.3   3     8.7    -2.0    -1.3   900.   -7.   21.6  1.044   .958     0.
  754.36    4.509   23.5  -2.93   50.65  99.99  12.3   3     9.2    -1.8    -1.3   900.   -7.   21.6   .962   .962     0.
  755.36    4.515   21.5  -2.93   46.34  99.99  12.3   3     8.2    -1.7    -1.3   900.   -7.   21.6   .880   .860     0.
  756.36    4.521   19.0  -3.67   40.95  99.99  12.3   3     7.9    -1.5    -1.3   900.   -7.   21.6   .778   .778     0.
  757.37    4.526   16.5  -3.67   35.57  99.99  12.3   2     6.7    -1.9    -1.3   900.   -7.   21.6  1.027   .974     0.
  758.37    4.530   14.9  -2.35   32.12  99.99  12.3   2     4.8    -1.7    -1.3   900.   -7.   21.5   .927   .927     0.
  759.37    4.534   12.5  -3.52   26.94  99.99  12.3   2     4.6    -1.4    -1.3   900.   -7.   21.6   .778   .778     0.
  760.37    4.537    8.4  -4.55   20.26  99.99  12.3   2     4.1    -1.1    -1.3   900.   -7.   21.6   .585   .585     0.
  761.38    4.539    6.2  -4.69   13.36  99.99  12.3   1     2.7    -1.2    -1.3   900.   -7.   21.6   .640   .640     0.
  762.38    4.541    3.0  -4.69    6.47  99.99  12.3   1     1.3     -.6    -1.3   900.   -7.   21.5   .310   .310     0.
  763.38    4.541    1.5  -2.20    3.23  99.99  12.3   1      .4     -.3    -1.3   900.   -7.   21.5   .155   .155     0.
  764.38    4.542    1.5   0.00    1.73   2.86  12.3   1      .3      .3     1.9   900.   11.   20.7   .155   .235     7.
  765.38    4.542     .5  -1.47    1.08  99.99  12.3   1      .1     -.1    -1.3   900.   -7.   21.5   .052   .052     0.
  766.38    4.542    0.0   -.73    0.00   6.86  12.3   1     0.0      .0      .7   900.    4.   21.1  -.000  -.000     5.
  767.40    4.542    3.0   4.40    1.71    .69  12.3   1      .5     6.6    15.7   973.   85.   15.0   .286   .483    39.
  768.40    4.544    6.3   4.84    2.79    .58  12.3   1     1.2    15.2    24.2  1194.  106.   13.4   .490   .724    51.
  769.40    4.546    9.5   4.84    3.47    .54  12.3   1     1.8    23.2    31.8  1382.  121.   12.0   .645   .844    55.
  770.40    4.549   12.9   4.84    3.83    .52  12.2   1     2.6    31.3    40.2  1581.  133.   10.3   .758   .893    60.
  771.40    4.553   15.8   4.25    3.78    .54  12.2   2     3.4    34.5    47.8  1556.  161.    7.4   .569   .793    70.
  772.40    4.558   17.5   2.49    6.44    .55  12.2   2     3.9    23.7    30.7  1410.  114.   12.6   .693   .871    54.
  773.40    4.563   18.4   1.32    8.86    .67  12.2   2     4.1    15.2    19.3  1274.   79.   15.9   .809   .902    41.
  774.40    4.568   19.5   1.61    6.39    .61  12.2   2     4.5    18.8    23.7  1362.   91.   14.9   .802   .901    45.
  775.40    4.574   20.7   1.76    8.22    .58  12.2   2     4.9    21.5    27.0  1431.   99.   14.3   .810   .902    49.
  776.40    4.580   22.0   1.91    7.98    .56  12.2   2     5.3    24.4    30.6  1502.  107.   13.5   .820   .902    51.
  777.40    4.586   23.2   1.76    8.41    .56  12.2   2     5.7    24.3    30.5  1526.  105.   13.7   .852   .904    50.
  778.41    4.592   25.0   2.64    6.66    .51  12.2   2     6.4    36.5    45.3  1714.  139.    9.3   .817   .902    62.
  779.40    4.600   26.5   2.20    7.41    .51  12.1   3     7.0    33.5    43.6  1546.  148.    8.3   .632   .836    66.
  780.40    4.607   27.5   1.47    9.70    .54  12.1   3     7.5    25.6    32.4  1444.  118.   12.2   .702   .874    55.
  781.41    4.615   28.0    .73   12.92    .64  12.1   3     7.7    17.0    21.0  1302.   85.   15.4   .793   .900    43.
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   10/01/76                         VEHICLE PERFORMANCE SIMULATION                                              PAG

                        DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )

                                    INST          CUM
   SEC.    MILES    MPH    ACC      MPG    BSFC   MPG GEAR    RDLD    HPW     HPE    RPM   TORQ    VAC     SR    ETA PCT.WOT
-----------------------------------------------------------------------------------------------------------------------------

  782.41   4.623   28.3    .44    14.56     .72  12.1   3      7.8    13.5    16.7  1237.    71.   16.6   .843   .904    37.
  783.41   4.631   28.9    .88    12.32     .66  12.1   3      8.1    19.6    24.2  1359.    94.   14.7   .784   .898    46.
  784.41   4.639   28.9   0.00    18.13     .97  12.1   3      8.1     8.1    10.2  1157.    46.   18.7   .921   .921    27.
  785.41   4.647   28.9   0.00    18.13     .97  12.2   3      8.1     8.1    10.2  1157.    46.   18.7   .921   .921    27.
  786.39   4.654   28.8   -.15    20.23    1.14  12.2   3      8.0     6.1     7.7  1129.    36.   19.3   .940   .940    23.
  787.39   4.662   28.5   -.44    25.73    2.10  12.2   3      7.9     2.2     3.3  1083.    16.   20.9   .970   .970    14.
  788.40   4.670   28.3   -.29    22.48    1.45  12.2   3      7.8     4.1     5.4  1091.    26.   20.2   .956   .956    18.
  789.40   4.678   28.3   0.00    18.15     .98  12.2   3      7.8     7.8     9.9  1135.    46.   18.7   .919   .919    27.
  790.40   4.686   28.3   0.00    18.15     .98  12.2   3      7.8     7.8     9.9  1135.    46.   18.7   .919   .919    27.
  791.38   4.694   28.2   -.15    20.23    1.16  12.2   3      7.8     5.8     7.4  1108.    35.   19.5   .938   .938    22.
  792.38   4.702   27.6   -.88    59.49   99.99  12.2   3      8.0    -2.1    -1.3   900.    -7.   21.6  1.130   .685     0.
  793.21   4.708   27.5   -.15    20.22    1.18  12.2   3      7.5     5.6     7.1  1063.    35.   19.5   .936   .936    21.
  794.21   4.716   27.5   0.00    18.15     .99  12.2   3      7.5     7.5     9.5  1108.    45.   18.7   .915   .915    26.
  795.21   4.723   27.5   0.00    18.15     .99  12.2   3      7.5     7.5     9.5  1108.    45.   18.7   .915   .915    26.
  796.21   4.731   27.5   0.00    18.15     .99  12.2   3      7.5     7.5     9.5  1108.    45.   18.7   .915   .915    26.
  797.21   4.738   27.5   0.00    18.15     .99  12.3   3      7.5     7.5     9.5  1108.    45.   18.7   .915   .915    26.
  798.21   4.746   27.5   0.00    18.15     .99  12.3   3      7.5     7.5     9.5  1108.    45.   18.7   .915   .915    26.
  799.19   4.754   27.6    .15    16.62     .86  12.3   3      7.5     9.4    11.9  1136.    55.   17.9   .895   .895    30.
  800.19   4.761   28.0    .59    13.64     .67  12.3   3      7.7    15.2    18.8  1269.    78.   16.0   .813   .902    40.
  801.20   4.769   28.5    .73    12.98     .63  12.3   3      7.9    17.4    21.4  1316.    85.   15.4   .798   .900    43.
  802.23   4.778   30.0   2.20     7.25     .52  12.3   3      8.6    38.6    48.7  1640.   156.    7.9   .674   .860    68.
  803.23   4.786   31.0   1.47     9.88     .53  12.2   3      9.1    29.8    36.7  1538.   125.   11.3   .743   .888    58.
  804.23   4.795   32.0   1.47     9.92     .52  12.2   3      9.6    31.0    38.0  1563.   128.   11.0   .754   .892    58.
  805.23   4.804   33.0   1.47     9.94     .52  12.2   3     10.1    32.2    39.3  1588.   130.   10.7   .766   .895    59.
  806.23   4.813   33.0   0.00    18.43     .88  12.2   3     10.1    10.1    12.5  1305.    50.   18.3   .932   .932    30.
  807.25   4.823   33.6    .88    12.62     .56  12.2   3     10.4    23.9    29.1  1466.   103.   14.0   .832   .903    50.
  808.25   4.832   34.0    .59    14.23     .61  12.2   3     10.7    19.8    24.3  1433.    89.   15.2   .874   .903    44.
  809.25   4.841   34.3    .44    15.10     .64  12.3   3     10.6    17.7    22.0  1409.    82.   15.7   .897   .897    42.
  810.23   4.851   34.2   -.15    20.23     .99  12.3   3     10.8     8.4    10.5  1329.    42.   19.1   .948   .948    27.
  811.24   4.860   34.0   -.29    22.32    1.19  12.3   3     10.7     6.2     7.9  1304.    32.   20.0   .961   .961    23.
  812.24   4.870   34.0   0.00    18.52     .86  12.3   3     10.7    10.7    13.2  1340.    52.   16.2   .935   .935    31.
  813.21   4.879   33.9   -.15    20.22    1.00  12.3   3     10.6     8.3    10.3  1318.    41.   19.2   .948   .943    27.
  814.21   4.888   33.6   -.44    34.95    1.62  12.3   3     10.4     3.7     5.1  1276.    21.   20.9   .970   .970    19.
  815.22   4.898   33.1   -.73    50.56   13.92  12.3   3     10.2     -.7      .1   900.     1.   21.2  1.355   .738     3.
  816.02   4.905   33.0   -.15    20.20    1.03  12.3   3     10.1     7.9     9.8  1285.    40.   19.3   .946   .946    26.
  817.03   4.914   32.5   -.73    51.32  134.02  12.3   3      9.9     -.8      .0   900.     0.   21.2  1.331   .751     3.
  818.03   4.923   32.0   -.73    51.97   99.99  12.4   3      9.7     -.9     -.0   900.    -0.   21.2  1.310   .763     3.
  818.84   4.930   31.9   -.15    20.16    1.06  12.4   3      9.5     7.4     9.3  1244.    39.   19.4   .945   .945    25.
  819.84   4.939   31.6   -.44    25.10    1.80  12.4   3      9.4     3.1     4.3  1200.    19.   21.0   .970   .970    18.
  820.82   4.948   31.5   -.15    20.14    1.07  12.4   3      9.3     7.2     9.0  1230.    39.   19.4   .944   .944    25.
  821.82   4.956   30.6  -1.32    65.96   99.99  12.4   3     10.1    -2.3    -1.3   900.    -7.   21.6  1.253   .798     0.
  822.82   4.965   30.0   -.88    64.66   99.99  12.4   3      9.0    -2.3    -1.3   900.    -7.   21.6  1.228   .814     0.
  823.64   4.971   29.9   -.15    20.17    1.11  12.4   3      8.6     6.5     8.2  1170.    37.   19.5   .942   .942    24.
  824.64   4.980   29.9   0.00    18.08     .95  12.4   3      8.6     8.5    10.7  1193.    47.   18.7   .923   .923    28.
  825.64   4.988   29.9   0.00    18.08     .95  12.4   3      8.6     8.5    10.7  1193.    47.   18.7   .923   .923    28.
  826.64   4.996   29.9   0.00    18.08     .95  12.4   3      8.6     8.5    10.7  1193.    47.   18.7   .923   .923    28.
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10/01/76                                       VEHICLE PERFORMANCE SIMULATION                                          PAG

                                      DRIVING SCHEDULE ( UDC001 )        USING ROUTE ( LEVEL  )

                                  INST          CUM
   SEC.     MILES    MPH    ACC    MPG   BSFC   MPG GEAR    ROLD     HPW      HPE   RPM  TORQ   VAC      SR    ETA PCT.WOT
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  827.64    5.005   29.6   -.44  25.48   1.99  12.5   3      8.4     2.5      3.6 1124.   17.  20.9    .970   .970    15.
  828.61    5.013   29.5   -.15  20.20   1.12  12.5   3      8.4     6.3      8.0 1155.   37.  19.5    .941   .941    23.
  829.61    5.021   29.5   0.00  18.10    .96  12.5   3      8.4     8.4     10.5 1179.   47.  18.7    .922   .922    28.
  830.62    5.029   29.3   -.29  22.47   1.40  12.5   3      8.3     4.4      5.6 1128.   27.  20.2    .958   .958    19.
  831.62    5.037   28.9   -.59  28.88   4.97  12.5   3      8.1      .3      1.2 1098.    6.  21.5    .970   .970    10.
  832.62    5.045   28.2  -1.03  60.78  99.99  12.5   3      6.9    -2.2     -1.3  900.   -7.  21.6   1.155   .866     0.
  833.62    5.053   27.7   -.73  47.27  99.99  12.5   3      7.7    -1.4      -.6  900.   -4.  21.2   1.134   .882     1.
  834.62    5.060   27.0  -1.03  58.20  99.99  12.5   3      7.9    -2.1     -1.3  900.   -7.  21.6   1.106   .904     0.
  835.62    5.068   25.5  -2.20  54.96  99.99  12.5   3      9.1    -2.0     -1.3  900.   -7.  21.6   1.044   .958     0.
  836.62    5.075   23.7  -2.64  51.08  99.99  12.6   3      8.9    -1.8     -1.3  900.   -7.  21.6    .971   .971     0.
  837.62    5.081   22.0  -2.49  47.42  99.99  12.6   3      7.9    -1.7     -1.3  900.   -7.  21.5    .901   .901     0.
  838.62    5.087   20.5  -2.20  44.19  99.99  12.5   3      6.9    -1.6     -1.3  900.   -7.  21.6    .839   .839     0.
  839.62    5.092   19.2  -1.91  41.39  99.99  12.6   3      6.0    -1.5     -1.3  900.   -7.  21.6    .786   .786     0.
  840.62    5.098   19.2   0.00  16.34   1.20  12.6   3      4.4     4.4      6.0  900.   35.  19.0    .786   .850    17.
  841.69    5.103   20.0   1.17   9.52    .67  12.6   2      4.6    15.3     19.4 1310.   78.  16.0    .855   .904    40.
  842.69    5.109   20.9   1.32   9.26    .63 -12.6   2      4.9    17.5     22.1 1369.   85.  15.5    .855   .904    43.
  843.65    5.115   21.4    .73  45.24  99.99  12.6   3      5.1    12.2     -4.6 1124.  -23.  23.2    .701   .874     0.
  844.69    5.121   22.0    .88  11.17    .67  12.6   3      5.3    14.1     18.1 1176.   81.  15.7    .659   .868    41.
  845.69    5.127   22.6    .88  11.30    .67  12.6   3      5.5    14.6     18.6 1192.   82.  15.6    .699   .873    41.
  846.69    5.134   23.2    .88  11.42    .66  12.6   3      5.7    15.0     19.1 1208.   83.  15.5    .708   .876    42.
  847.70    5.140   24.0   1.17  10.44    .59  12.6   3      6.0    18.8     24.0 1293.   97.  14.3    .684   .865    47.
  848.69    5.147   25.0   1.47   9.45    .55  12.6   3      6.4    23.1     29.6 1380.  113.  12.8    .667   .857    53.
  849.69    5.154   26.0   1.47   9.56    .55  12.6   3      6.8    24.2     30.7 1406.  115.  12.6    .682   .864    54.
  850.69    5.161   26.6    .88  12.02    .62  12.6   3      7.1    17.7     22.0 1298.   89.  15.0    .755   .892    44.
  851.69    5.169   26.6   0.00  18.14   1.00  12.6   3      7.1     7.1      9.0 1077.   44.  18.7    .911   .911    25.
  852.70    5.176   26.8    .29  15.39    .80  12.6   3      7.2    10.7     13.4 1155.   61.  17.4    .855   .904    33.
  853.72    5.184   27.0    .29  15.41    .80  12.6   3      7.2    10.8     13.5 1160.   61.  17.4    .859   .904    33.
  854.73    5.191   27.2    .29  15.43    .80  12.6   3      7.3    10.9     13.7 1166.   62.  17.4    .860   .904    33.
  855.74    5.199   27.8    .88  12.20    .61  12.6   3      7.6    18.7     23.1 1328.   91.  14.9    .772   .896    45.
  856.74    5.207   28.1    .44  14.52    .72  12.6   3      7.7    13.3     16.6 1231.   71.  16.5    .841   .903    37.
  857.75    5.215   28.8   1.03  11.63    .58  12.6   3      8.0    21.5     26.5 1389.  100.  14.1    .764   .894    49.
  858.73    5.223   28.9    .15  16.69    .84  12.6   3      8.1    10.1     12.7 1182.   56.  17.8    .901   .901    32.
  859.71    5.231   29.0    .15  16.69    .84  12.6   3      8.1    10.1     12.8 1185.   57.  17.8    .902   .902    32.
  860.69    5.239   29.1    .15  16.70    .84  12.6   3      8.2    10.2     12.6 1189.   57.  17.8    .902   .902    32.
  861.66    5.246   29.0   -.15  20.22   1.13  12.6   3      8.1     6.2      7.6 1136.   36.  19.5    .941   .941    23.
  862.66    5.254   28.1  -1.32  50.57  99.99  12.6   3      6.9    -2.2     -1.3  900.   -7.  21.6   1.151   .869     0.
  863.66    5.262   27.5   -.88  59.28  99.99  12.6   3      7.9    -2.1     -1.3  900.   -7.  21.6   1.126   .888     0.
  864.67    5.270   27.0   -.73  46.29  99.99  12.6   3      7.5    -1.5      -.7  900.   -4.  21.2   1.106   .904     1.
  865.67    5.277   25.8  -1.76  55.61  99.99  12.7   3      6.6    -2.0     -1.3  900.   -7.  21.6   1.057   .947     0.
  866.67    5.284   25.0  -1.17  53.89  99.99  12.7   3      7.3    -1.9     -1.3  900.   -7.  21.6   1.024   .977     0.
  867.68    5.291   24.5   -.73  42.68  99.99  12.7   3      6.5    -1.7     -1.0  900.   -6.  21.3   1.003   .997     1.
  868.78    5.299   24.8    .44  14.04    .77  12.7   3      6.3    11.3     14.1 1142.   65.  17.0    .800   .901    34.
  869.78    5.306   25.1    .44  14.11    .77  12.7   3      6.5    11.5     14.3 1150.   65.  17.0    .804   .901    34.
  870.78    5.313   25.5    .59  13.25    .71  12.7   3      6.6    13.5     16.8 1199.   73.  16.4    .784   .898    38.
  871.79    5.320   25.7    .29  15.26    .82  12.7   3      6.7    10.1     12.7 1123.   59.  17.5    .843   .904    31.
  872.81    5.327   26.2    .73  12.67    .66  12.7   3      6.9    15.6     19.4 1250.   81.  15.7    .772   .896    41.
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10/01/76                                  VEHICLE PERFORMANCE SIMULATION                                     PAG

                                   DRIVING SCHEDULE ( UDCG01 )          USING ROUTE ( LEVEL  )

                                   INST          CUM
    SEC.    MILES    MPH    ACC     MPG   BSFC   MPG GEAR   ROLD    MPW     HPF   RPM  TORQ   VAC    SR    ETA PCT.WOT
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   873.80   5.334   26.9   1.03   11.42    .59  12.7   3     7.2   19.8    24.6 1341.   97.  14.5  .740  .887   47.
   874.80   5.342   27.5    .88   12.15    .61  12.7   3     7.5   18.5    22.9 1321.   91.  14.9  .767  .895   45.
   875.80   5.350   27.8    .44   14.49    .73  12.7   3     7.6   13.1    16.3 1223.   70.  16.7  .838  .903   37.
   876.81   5.357   28.4    .88   12.27    .60  12.7   3     7.9   19.2    23.7 1345.   93.  14.8  .778  .897   46.
   877.81   5.365   29.0    .88   12.33    .60  12.7   3     8.1   19.7    24.3 1362.   94.  14.7  .785  .898   46.
   878.82   5.374   29.2    .29   15.69    .76  12.7   3     8.2   12.1    15.1 1221.   65.  17.1  .881  .903   35.
   879.80   5.382   29.1   -.15   20.22   1.13  12.7   3     8.2    6.2     7.9 1140.   36.  19.5  .941  .941   23.
   880.78   5.389   29.0   -.15   20.22   1.13  12.7   3     8.1    6.2     7.8 1136.   36.  19.5  .941  .941   23.
   881.75   5.397   28.9   -.15   20.23   1.14  12.7   3     8.1    6.1     7.8 1132.   36.  19.5  .941  .941   23.
   882.75   5.405   28.5   -.59   29.07   5.28  12.7   3     7.9     .3     1.1 1083.    6.  21.5  .970  .970   10.
   883.74   5.413   28.1   -.59   29.28   5.64  12.7   3     7.7     .2     1.1 1067.    5.  21.4  .970  .970    9.
   884.72   5.421   28.0   -.15   20.23   1.16  12.7   3     7.7    5.8     7.4 1101.   35.  19.5  .938  .938   22.
   885.72   5.428   28.0   0.00   18.15    .98  12.7   3     7.7    7.7     9.7 1125.   45.  18.7  .917  .917   26.
   886.71   5.436   27.6   -.59   29.57   6.15  12.8   3     7.5     .1      .9 1046.    5.  21.4  .970  .970    9.
   887.71   5.444   27.2   -.59   29.81   6.64  12.8   3     7.3     .0      .8 1033.    4.  21.4  .970  .970    9.
   888.71   5.451   26.6   -.88   57.34  99.99  12.8   3     7.5   -2.0    -1.3  900.   -7.  21.6 1.089  .918    0.
   889.81   5.459   27.0    .29   13.50    .69  12.8   3     7.2   14.5    18.0 1241.   76.  16.1  .802  .901   39.
   890.81   5.467   27.5    .73   12.85    .64  12.8   3     7.5   16.6    20.5 1288.   84.  15.5  .787  .899   42.
   891.81   5.475   27.4    .44   14.49    .73  12.8   3     7.6   13.1    16.3 1223.   70.  16.7  .836  .903   37.
   892.83   5.482   28.0    .29   15.52    .78  12.8   3     7.7   11.4    14.2 1186.   63.  17.3  .869  .904   34.
   893.84   5.490   27.8   -.29   22.47   1.48  12.8   3     7.6    3.9     5.2 1072.   25.  20.2  .956  .956   17.
   894.89   5.498   28.0    .29   15.52    .78  12.8   3     7.7   11.4    14.2 1188.   63.  17.3  .869  .904   34.
   895.89   5.506   28.0   0.00   18.15    .98  12.8   3     7.7    7.7     9.7 1125.   45.  18.7  .917  .917   26.
   896.89   5.514   28.0   0.00   18.15    .98  12.8   3     7.7    7.7     9.7 1125.   45.  18.7  .917  .917   26.
   897.89   5.522   27.7   -.44   25.93   2.20  12.8   3     7.5    2.0     3.0 1052.   15.  20.9  .970  .970   13.
   898.89   5.529   27.4   -.44   26.01   2.23  12.8   3     7.4    1.9     2.9 1041.   15.  20.8  .970  .970   12.
   899.89   5.537   26.9   -.73   46.15  99.99  12.8   3     7.4    1.5     -.7  900.   -4.  21.2 1.162  .968    1.
   900.88   5.544   26.6   -.44   26.24   2.33  12.8   3     7.1    1.8     2.7 1010.   14.  20.8  .970  .970   11.
   901.85   5.551   26.5   -.15   20.17   1.21  12.9   3     7.0    5.2     6.7 1048.   34.  19.5  .932  .932   20.
   902.85   5.559   26.5   0.00   18.14   1.00  12.9   3     7.0    7.0     9.0 1073.   44.  18.7  .910  .910   25.
   903.85   5.566   26.5   0.00   18.14   1.00  12.9   3     7.0    7.0     9.0 1073.   44.  18.7  .910  .910   25.
   904.87   5.574   26.3   -.29   22.44   1.56  12.9   3     7.0    3.5     4.6 1017.   24.  20.2  .953  .953   16.
   905.84   5.581   26.2   -.15   20.18   1.21  12.9   3     6.9    5.1     6.6 1037.   33.  19.5  .931  .931   20.
   906.84   5.588   26.2   0.00   18.13   1.01  12.9   3     6.9    6.9     8.8 1063.   44.  18.7  .909  .909   24.
   907.84   5.595   25.9   -.44   26.47   2.43  12.9   3     6.8    1.6     2.5  984.   13.  20.8  .970  .970   11.
   908.84   5.602   25.6   -.44   26.57   2.47  12.9   3     6.7    1.5     2.4  972.   13.  20.7  .970  .970   10.
   909.84   5.610   25.6   0.00   18.11   1.02  12.9   3     6.7    6.7     8.6 1042.   43.  18.7  .906  .906   24.
   910.86   5.617   25.9    .44   14.20    .76  12.9   3     6.8   12.0    14.9 1172.   67.  16.9  .814  .902   35.
   911.84   5.624   25.8   -.15   20.15   1.23  12.9   3     6.7    5.0     6.4 1023.   33.  19.5  .929  .929   14.
   912.84   5.631   25.5   -.44   26.61   2.49  12.9   3     6.6    1.5     2.4  969.   13.  20.7  .970  .970   10.
   913.84   5.638   24.6  -1.32   53.02  99.99  12.9   3     7.4   -1.9    -1.3  900.   -7.  21.5 1.047  .993    0.
   914.84   5.645   23.5  -1.61   50.65  99.99  12.9   3     7.3   -1.8    -1.3  900.   -7.  21.6  .962  .962    0.
   915.84   5.651   22.2  -1.91   47.85  99.99  13.0   3     7.2   -1.7    -1.3  900.   -7.  21.5  .909  .909    0.
   916.84   5.657   21.6   -.88   46.56  99.99  13.0   3     5.6   -1.7    -1.3  900.   -7.  21.5  .885  .885    0.
   917.84   5.663   21.6   0.00   17.75   1.13  13.0   3     5.2    5.2     6.7  914.   38.  18.3  .871  .903   17.
   918.82   5.669   21.7    .15   16.00    .98  13.0   3     5.2    6.7     8.5  970.   46.  18.3  .824  .903   23.
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10/01/76                         VEHICLE PERFORMANCE SIMULATION                                   PAG

                      DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )

                                  INST           CUM
   SEC.     MILES    MPH    ACC    MPG   BSFC   MPG GEAR     RDLD     HPW      HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
-------------------------------------------------------------------------------------------------------------------------------

  919.87    5.675   22.6   1.32    9.64   .56  13.0   3       5.5    19.1     24.9 1287.  101.   13.9   .647   .845    49.
  920.87    5.682   23.4   1.17   10.33   .60  13.0   3       5.8    18.3     23.4 1278.   96.   14.4   .675   .861    47.
  921.87    5.688   24.0    .88   11.57   .65  13.0   3       6.0    15.6     19.7 1230.   84.   15.4   .719   .880    42.
  922.88    5.695   24.2    .29   15.06   .85  13.0   3       6.1     9.3     11.7 1063.   57.   17.6   .824   .903    30.
  923.90    5.702   24.4    .29   15.09   .84  13.0   3       6.2     9.4     11.8 1088.   57.   17.6   .826   .903    30.
  924.91    5.709   24.9    .73   12.43   .68  13.0   3       6.4    14.6     18.3 1218.   79.   15.9   .754   .891    40.
  925.92    5.716   25.1    .29   15.19   .83  13.0   3       6.5     9.8     12.3 1107.   58.   17.5   .836   .903    31.
  926.93    5.723   25.2    .15   16.45   .91  13.0   3       6.5     8.2     10.4 1067.   51.   18.1   .870   .903    27.
  927.88    5.730   25.3    .15   16.46   .91  13.0   3       6.5     8.3     10.5 1070.   51.   19.1   .871   .903    27.
  928.89    5.737   25.5    .29   15.24   .83  13.0   3       6.6    10.0     12.5 1118.   59.   17.5   .841   .903    31.
  929.89    5.744   25.2   -.44   26.70  2.54  13.0   3       6.5     1.5      2.3  937.   13.   20.7   .970   .970    10.
  930.90    5.751   25.0   -.29   22.48  1.64  13.0   3       6.4     3.1      4.2  969.   23.   20.1   .951   .951    14.
  931.90    5.758   25.0   0.00   18.09  1.03  13.0   3       6.4     6.4      8.3 1021.   43.   18.7   .903   .903    23.
  932.90    5.765   25.0   0.00   18.09  1.03  13.0   3       6.4     6.4      8.3 1021.   43.   18.7   .903   .903    23.
  933.90    5.772   24.7   -.44   26.88  2.62  13.0   3       6.3     1.4      2.2  936.   12.   20.7   .970   .970     9.
  934.91    5.779   24.5   -.29   22.50  1.67  13.0   3       6.2     3.0      4.0  951.   22.   20.1   .950   .950    13.
  935.92    5.785   24.3   -.29   22.51  1.68  13.0   3       6.2     2.9      4.0  943.   22.   20.1   .949   .949    13.
  936.92    5.792   24.3   0.00   18.05  1.04  13.0   3       6.2     6.2      8.0  996.   42.   18.7   .899   .899    22.
  937.94    5.799   24.5    .29   15.10   .84  13.0   3       6.2     9.5     11.9 1091.   57.   17.5   .828   .903    30.
  938.96    5.806   25.0    .73   12.45   .67  13.0   3       6.4    14.7     18.4 1220.   79.   15.9   .755   .892    40.
  939.96    5.813   25.0   0.00   18.09  1.03  13.0   3       6.4     6.4      8.3 1021.   43.   18.7   .903   .903    23.
  940.95    5.820   24.6   -.59   34.58 11.77  13.0   3       6.3     -.3       .4  900.    2.   21.1  1.007   .993     4.
  941.95    5.827   24.6   0.00   18.06  1.04  13.0   3       6.3     6.3      8.1 1007.   42.   18.7   .900   .900    23.
  942.96    5.833   24.1   -.73   42.08 99.99  13.1   3       6.3    -1.7     -1.1  900.   -6.   21.3   .987   .987     0.
  944.07    5.841   24.5    .59   13.10   .72  13.1   3       6.2    12.6     16.0 1170.   72.   16.5   .772   .896    37.
  945.07    5.848   25.1    .88   11.80   .64  13.1   3       6.5    16.5     20.6 1260.   86.   15.3   .734   .886    43.
  946.08    5.855   25.6    .73   12.56   .67  13.1   3       6.7    15.2     18.9 1235.   80.   15.9   .764   .894    41.
  947.08    5.862   25.1   -.73   43.56 99.99  13.1   3       6.7    -1.6     -1.0  900.   -6.   21.3  1.028   .973     1.
  948.08    5.869   24.0  -1.61   51.73 99.99  13.1   3       7.5    -1.8     -1.3  900.   -7.   21.6   .983   .983     0.
  949.08    5.875   22.0  -2.93   47.42 99.99  13.1   3       8.5    -1.7     -1.3  900.   -7.   21.6   .901   .901     0.
  950.08    5.881   20.1  -2.79   43.32 99.99  13.1   3       7.4    -1.5     -1.3  900.   -7.   21.6   .923   .823     0.
  951.09    5.886   16.9  -4.69   36.43 99.99  13.1   2       8.0    -1.6     -1.3  900.   -7.   21.6  1.052   .951     0.
  952.09    5.891   13.6  -4.84   29.31 99.99  13.1   2       6.4    -1.6     -1.3  900.   -7.   21.6   .847   .847     0.
  953.09    5.894   10.3  -4.84   22.20 99.99  13.1   2       4.7    -1.2     -1.3  900.   -7.   21.5   .641   .641     0.
  954.10    5.896    7.0  -4.84   15.09 99.99  13.1   1       3.2    -1.3     -1.3  900.   -7.   21.6   .722   .722     0.
  955.10    5.898    3.7  -4.84    7.99 99.99  13.1   1       1.6     -.7     -1.3  900.   -7.   21.6   .382   .382     0.
  956.10    5.898     .4  -4.84     .86 99.99  13.1   1        .2     -.1     -1.3  900.   -7.   21.6   .041   .041     0.
  957.10    5.898    0.0   -.59    0.00  6.86  13.1   1       0.0      .0       .7  900.    4.   21.1  -.000  -.000     5.
  958.10    5.898    0.0   0.00    0.00  6.86  13.1   1       0.0     0.0       .7  900.    4.   21.1  0.000  0.000     5.
  959.10    5.898    0.0   0.00    0.00  6.86  13.1   1       0.0     0.0       .7  900.    4.   21.1  0.000  0.000     5.
  960.10    5.899    2.0   2.93    1.46   .87  13.1   1        .3     3.0      9.7  900.   57.   17.3   .206   .359    26.
  961.10    5.900    5.3   4.84    2.46   .59  13.1   1       1.0    12.7     22.4 1139.  103.   13.6   .432   .664    49.
  962.10    5.902    8.6   4.84    3.33   .55  13.1   1       1.6    20.7     29.1 1320.  116.   12.5   .605   .819    54.
  963.10    5.904   11.9   4.84    3.74   .52  13.0   1       2.4    28.8     37.6 1523.  130.   10.8   .726   .883    59.
  964.10    5.908   15.2   4.84    3.04   .58  13.0   2       3.2    36.7     53.6 1595.  176.    6.0   .534   .765    75.
  965.10    5.913   17.5   3.37    5.19   .51  13.0   2       3.9    30.7     40.8 1519.  141.    9.5   .646   .845    63.
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10/01/76                                VEHICLE PERFORMANCE SIMULATION                                    PAG

                                 DRIVING SCHEDULE ( UDC001 )      USING ROUTE ( LEVEL  )

                               INST          CUM
   SEC.    MILES   MPH   ACC    MPG   BSFC   MPG GEAR   RDLD    HPW    HPF   RPM  TORQ   VAC    SR    ETA PCT.WOT
-------------------------------------------------------------------------------------------------------------------
  966.10   5.918  18.6  1.61   8.25    .62  13.0   2     4.2   17.8   22.6 1327.   90.  15.0  .785  .898   45.
  967.10   5.923  20.0  2.05   7.51    .56  13.0   2     4.6   23.3   29.4 1443.  107.  13.4  .777  .697   51.
  968.11   5.929  21.1  1.61   8.61    .59  13.0   2     5.0   20.5   25.8 1423.   95.  14.7  .831  .903   47.
  969.11   5.935  22.0  1.32   9.41    .62  13.0   2     5.3   18.5   23.4 1411.   87.  15.3  .873  .903   44.
  970.09   5.941  23.0  1.47   9.19    .56  13.0   3     5.7   21.0   27.5 1327.  109.  13.2  .639  .841   52.
  971.10   5.948  24.5  2.20   7.27    .51  13.0   3     6.2   30.7   40.9 1495.  144.   9.2  .604  .818   64.
  972.10   5.955  26.3  2.64   6.69    .51  12.9   2     7.0   38.6   47.8 1762.  142.   9.5  .836  .903   63.
  973.09   5.962  27.5  1.76   8.72    .52  12.9   3     7.5   29.5   37.4 1499.  131.  10.7  .676  .861   60.
  974.09   5.970  28.1   .88  12.23    .61  12.9   3     7.7   19.0   23.4 1336.   92.  14.8  .775  .897   46.
  975.09   5.978  28.4   .44  14.58    .72  12.9   3     7.9   13.5   16.8 1240.   71.  16.6  .844  .904   38.
  976.07   5.985  28.5   .15  16.67    .85  12.9   3     7.9    9.8   12.5 1168.   56.  17.8  .900  .900   31.
  977.07   5.993  28.5  0.00  18.15    .97  12.9   3     7.9    7.9   10.0 1142.   46.  18.7  .920  .920   27.
  978.07   6.001  28.5  0.00  18.15    .97  13.0   3     7.9    7.9   10.0 1142.   46.  18.7  .920  .920   27.
  979.07   6.008  27.7 -1.17  59.71  99.99  13.0   3     8.5   -2.1   -1.3  900.   -7.  21.6 1.134  .882    0.
  980.03   6.016  27.5  -.29  22.46   1.49  13.0   3     7.5    3.6    5.1 1061.   25.  20.2  .955  .955   17.
  981.03   6.024  27.2  -.44  26.06   2.26  13.0   3     7.3    1.9    2.9 1033.   15.  20.8  .970  .970   12.
  982.03   6.032  26.8  -.59  35.17   7.13  13.0   3     7.2    -.0     .7  900.    4.  21.1 1.097  .911    5.
  983.01   6.039  26.5  -.44  26.27   2.34  13.0   3     7.0    1.7    2.7 1007.   14.  20.8  .970  .970   11.
  984.02   6.046  26.0  -.73  44.87  99.99  13.0   3     7.0   -1.6    -.9  900.   -5.  21.3 1.065  .939    1.
  985.00   6.053  25.7  -.44  26.54   2.46  13.0   3     6.7    1.6    2.4  976.   13.  20.9  .970  .970   10.
  986.00   6.060  25.2  -.73  43.71  99.99  13.0   3     6.7   -1.6   -1.0  900.   -6.  21.3 1.032  .969    1.
  987.00   6.067  24.0 -1.76  51.73  99.99  13.0   3     7.8   -1.8   -1.3  900.   -7.  21.6  .983  .983    0.
  988.01   6.074  22.0 -2.93  47.42  99.99  13.0   3     8.5   -1.7   -1.3  900.   -7.  21.6  .901  .901    0.
  989.01   6.080  21.5  -.73  46.34  99.99  13.1   3     5.4   -1.7   -1.3  900.   -7.  21.6  .880  .880    0.
  990.01   6.086  21.5  0.00  17.73   1.13  13.1   3     5.1    5.1    6.6  912.   38.  18.8  .869  .904   19.
  991.03   6.092  21.8   .44  13.52    .82  13.1   3     5.2    9.6   12.1 1059.   60.  17.3  .759  .893   31.
  992.05   6.098  22.5  1.03  10.68    .63  13.1   3     5.5   16.0   20.6 1224.   88.  15.1  .677  .862   44.
  993.05   6.104  23.0   .73  12.06    .70  13.1   3     5.7   13.3   16.8 1168.   76.  16.1  .726  .883   39.
  994.06   6.111  22.8  -.29  22.29   1.77  13.1   3     5.6    2.6    3.6  900.   21.  20.1  .934  .934   12.
  995.06   6.117  22.8  0.00  17.94   1.09  13.1   3     5.6    5.6    7.2  948.   40.  18.7  .886  .900   20.
  996.08   6.124  23.0   .29  14.87    .87  13.1   3     5.7    8.7   11.0 1050.   55.  17.7  .807  .901   28.
  997.08   6.130  22.7  -.44  26.36   2.91  13.1   3     5.6    1.0    1.8  900.   11.  20.7  .930  .930    7.
  998.08   6.136  22.7  0.00  17.93   1.09  13.1   3     5.6    5.6    7.2  945.   40.  18.7  .885  .901   20.
  999.08   6.143  22.7  0.00  17.93   1.09  13.1   3     5.6    5.6    7.2  945.   40.  18.7  .885  .901   20.
 1000.15   6.149  23.5  1.17  10.35    .66  13.1   3     5.8   18.3   23.5 1281.   96.  14.4  .676  .862   47.  1
 1001.15   6.156  24.0   .73  12.25    .69  13.1   3     6.0   14.0   17.6 1195.   77.  16.0  .740  .888   40.  1
 1002.15   6.163  24.6   .88  11.68    .64  13.1   3     6.3   16.1   20.3 1246.   85.  15.3  .727  .883   43.  1
 1003.16   6.170  24.8   .29  15.14    .84  13.1   3     6.3    9.6   12.1 1099.   58.  17.6  .832  .903   30.  1
 1004.16   6.177  25.1   .44  14.11    .77  13.1   3     6.5   11.5   14.3 1150.   65.  17.0  .804  .901   34.  1
 1005.16   6.184  25.5   .59  13.25    .71  13.1   3     6.6   13.5   16.8 1199.   73.  16.4  .784  .898   38.  1
 1006.14   6.191  25.6   .15  16.50    .90  13.1   3     6.7    8.4   10.6 1078.   52.  18.0  .875  .903   28.  1
 1007.11   6.197  25.5  -.15  20.14   1.24  13.1   3     6.6    4.9    6.3 1013.   33.  19.5  .925  .928   19.  1
 1008.12   6.205  25.0  -.73  43.41  99.99  13.1   3     6.7   -1.6   -1.0  900.   -6.  21.3 1.024  .977    1.  1
 1009.12   6.211  24.1 -1.32  51.95  99.99  13.1   3     7.2   -1.8   -1.3  900.   -7.  21.6  .987  .967    0.  1
 1010.11   6.218  23.7  -.59  34.45  15.91  13.1   3     6.0    -.4     .3  900.    2.  21.2  .971  .971    4.  1
 1011.12   6.224  23.2  -.73  40.73  99.99  13.1   3     6.0   -1.7   -1.2  900.   -7.  21.3  .950  .950    0.  1
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10/01/76                                          VEHICLE PERFORMANCE SIMULATION                                          PAC

                                   DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )

                                 INST          CUM
   SEC.     MILES    MPH    ACC   MPG   BSFC   MPG GEAR    ROLD     HPW     HPE   RPM  TORQ   VAC     SR    ETA PCT.WOT
-----------------------------------------------------------------------------------------------------------------------

 1012.12    6.231   22.9   -.44  26.52   2.88 13.1   3      5.6     1.0     1.9  900.   11.  20.7   .938   .938    7.  1
 1013.11    6.237   22.5   -.59  34.24  31.20 13.1   3      5.5     -.5      .1  900.    1.  21.2   .921   .921    3.  1
 1014.12    6.243   22.0   -.73  47.42  99.99 13.2   3      5.6    -1.7    -1.3  900.   -7.  21.6   .901   .901    0.  1
 1015.11    6.249   21.6   -.59  34.08126.45 13.2   3      5.2     -.6      .0  900.    0.  21.2   .885   .885    3.  1
 1016.11    6.255   20.5  -1.61  44.19  99.59 13.2   3      6.1    -1.6    -1.3  900.   -7.  21.6   .839   .839    0.  1
 1017.12    6.261   17.5  -4.40  37.72  99.99 13.2   2      8.0    -2.0    -1.3  900.   -7.  21.6  1.089   .918    0.  1
 1018.12    6.265   14.2  -4.84  30.61  99.99 13.2   2      6.7    -1.6    -1.3  900.   -7.  21.5   .884   .884    0.  1
 1019.12    6.268   10.9  -4.84  23.49  99.99 13.2   2      5.0    -1.2    -1.3  900.   -7.  21.6   .678   .678    0.  1
 1020.13    6.271    7.6  -4.84  16.39  99.99 13.2   1      3.4    -1.4    -1.3  900.   -7.  21.6   .784   .784    0.  1
 1021.13    6.273    4.3  -4.84   9.27  99.99 13.2   1      1.9     -.8    -1.3  900.   -7.  21.6   .444   .444    0.  1
 1022.13    6.273    1.0  -4.84   2.16  99.99 13.2   1       .4     -.2    -1.3  900.   -7.  21.6   .103   .103    0.  1
 1023.13    6.274    0.0  -1.47   0.00   6.86 13.2   1      0.0      .0      .7  900.    4.  21.1  -.000  -.000    5.  1
 1024.13    6.274    0.0   0.00   0.00   6.86 13.2   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1025.13    6.274    0.0   0.00   0.00   6.86 13.2   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1026.13    6.274    0.0   0.00   0.00   6.86 13.2   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1027.13    6.274    0.0   0.00   0.00   6.86 13.2   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1028.13    6.274    0.0   0.00   0.00   6.86 13.2   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1029.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1030.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1031.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1032.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1033.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1034.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1035.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1036.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1037.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1038.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1039.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1040.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1041.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1042.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1043.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1044.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1045.13    6.274    0.0   0.00   0.00   6.86 13.1   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1046.13    6.274    0.0   0.00   0.00   6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1047.13    6.274    0.0   0.00   0.00   6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1048.13    6.274    0.0   0.00   0.00   6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1049.13    6.274    0.0   0.00   0.00   6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1050.13    6.274    0.0   0.00   0.00   6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1051.13    6.274    0.0   0.00   0.00   6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1052.13    6.274    0.0   0.00   0.00   6.86 13.0   1      0.0     0.0      .7  900.    4.  21.1  0.000  0.000    5.  1
 1053.13    6.274    1.2   1.76   1.01   1.16 13.0   1       .2     1.2     6.3  900.   37.  16.9   .124   .222   19.  1
 1054.13    6.274    4.0   4.11   2.22    .68 13.0   1       .7     8.3    16.3 1008.   65.  15.0   .368   .590   40.  1
 1055.13    6.276    7.3   4.84   3.04    .56 13.0   1      1.4    17.6    26.5 1249.  111.  13.0   .543   .772   53.  1
 1056.13    6.279   10.6   4.84   3.61    .53 13.0   1      2.1    25.6    34.1 1443.  124.  11.5   .682   .865   57.  1
 1057.13    6.292   13.9   4.84   3.87    .51 12.9   1      2.9    33.8    43.2 1642.  138.   9.7   .786   .899   62.  1
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10/01/76                                       VEHICLE PERFORMANCE SIMULATION                                         PAG

                                   DRIVING SCHEDULE ( UDC001 )      USING ROUTE ( LEVEL  )

                                  INST           CUM
   SEC.     MILES    MPH    ACC    MPG    BSFC   MPG GEAR    RDLD     HPW     HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
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 1058.13    6.286   17.0   4.55    3.42    .57  12.9   2      3.7    38.9    53.9 1629.  174.    6.3   .585   .804   74.   1
 1059.13    6.291   18.5   2.20    7.05    .56  12.9   2      4.2    22.7    29.0 1410.  108.   13.3   .735   .886   51.   1
 1060.13    6.296   20.0   2.20    7.22    .55  12.9   2      4.6    24.7    31.1 1464.  112.   12.9   .765   .895   53.   1
 1061.13    6.302   21.8   2.64    6.55    .52  12.9   2      5.2    31.5    39.4 1588.  130.   10.6   .769   .895   59.   1
 1062.13    6.309   23.0   1.76    8.31    .54  12.9   3      5.7    24.1    31.8 1377.  121.   11.9   .616   .826   56.   1
 1063.13    6.315   24.0   1.47    9.33    .56  12.9   3      6.0    22.1    28.6 1354.  111.   13.0   .653   .849   52.   1
 1064.13    6.322   24.8   1.17   10.57    .59  12.9   3      6.3    19.5    24.7 1313.   99.   14.2   .696   .871   48.   1
 1065.14    6.329   25.6   1.17   10.67    .58  12.9   3      6.7    20.3    25.5 1335.  100.   14.1   .707   .876   49.   1
 1066.14    6.336   26.5   1.32   10.19    .56  12.9   3      7.0    22.9    28.6 1369.  109.   13.2   .703   .874   52.   1
 1067.14    6.344   26.8    .44   14.33    .74  12.9   3      7.2    12.5    15.6 1197.   68.   16.8   .825   .903   36.   1
 1068.14    6.351   27.4    .88   12.14    .61  12.9   3      7.4    18.4    22.7 1318.   91.   14.9   .766   .895   45.   1
 1069.15    6.359   27.9    .73   12.91    .64  12.9   3      7.6    16.9    20.9 1299.   84.   15.5   .792   .899   43.   1
 1070.14    6.367   28.3    .59   13.69    .67  12.9   3      7.8    15.4    19.0 1277.   78.   16.0   .817   .902   40.   1
 1071.14    6.374   28.0   -.44   25.85   2.16  12.9   3      7.7     2.1     3.1 1064.   15.   20.9   .970   .970   13.   1
 1072.15    6.382   27.5   -.73   46.99  99.99  12.9   3      7.7    -1.5     -.7  900.   -4.   21.2  1.126   .888    1.   1
 1073.15    6.390   27.0   -.73   46.29  99.99  12.9   3      7.5    -1.5     -.7  900.   -4.   21.2  1.106   .904    1.   1
 1074.15    6.397   27.0   0.00   18.15   1.00  12.9   3      7.2     7.2     9.2 1050.   44.   18.7   .913   .913   25.   1
 1075.15    6.405   26.3  -1.03   56.69  99.99  12.9   3      7.6    -2.0    -1.3  900.   -7.   21.6  1.077   .929    0.   1
 1076.15    6.412   24.5  -2.64   52.91  99.99  12.9   3      9.3    -1.9    -1.3  900.   -7.   21.6  1.003   .997    0.   1
 1077.15    6.418   22.5  -2.93   48.50  99.99  12.9   3      8.7    -1.7    -1.3  900.   -7.   21.6   .921   .921    0.   1
 1078.15    6.424   21.5  -1.47   46.34  99.99  13.0   3      6.3    -1.7    -1.3  900.   -7.   21.6   .880   .880    0.   1
 1079.15    6.430   20.6  -1.32   44.40  99.99  13.0   3      5.8    -1.6    -1.3  900.   -7.   21.6   .844   .844    0.   1
 1080.15    6.435   19.0  -3.81   38.80  99.99  13.0   3      7.6    -1.4    -1.3  900.   -7.   21.6   .737   .737    0.   1
 1081.16    6.440   15.0  -4.40   32.33  99.99  13.0   2      6.7    -1.7    -1.3  900.   -7.   21.6   .934   .934    0.   1
 1082.16    6.444   12.3  -3.96   26.51  99.99  13.0   2      5.1    -1.4    -1.3  900.   -7.   21.6   .766   .766    0.   1
 1083.16    6.447   11.1  -1.76   23.93  99.99  13.0   2      3.1    -1.3    -1.3  900.   -7.   21.6   .691   .691    0.   1
 1084.16    6.450   10.6   -.73   22.85  99.99  13.0   2      2.3    -1.2    -1.3  900.   -7.   21.6   .660   .660    0.   1
 1085.16    6.453   10.0   -.88   21.55  99.99  13.0   2      2.2    -1.1    -1.3  900.   -7.   21.6   .622   .622    0.   1
 1086.17    6.456    9.5   -.73   20.48  99.99  13.0   2      2.0    -1.1    -1.3  900.   -7.   21.6   .591   .591    0.   1
 1087.16    6.458    9.1   -.59   15.40  99.99  13.0   2      1.8     -.6     -.5  900.   -3.   21.2   .566   .566    2.   1
 1088.16    6.461    8.7   -.59   14.74  99.99  13.0   2      1.7     -.6     -.5  900.   -3.   21.2   .542   .542    2.   1
 1089.13    6.463    8.6   -.15    9.13   2.14  13.0   2      1.6     1.0     2.7  900.   16.   20.4   .535   .545    9.   1
 1090.14    6.466    8.8    .29    7.80   1.36  13.0   2      1.7     2.8     5.1  900.   30.   19.4   .548   .679   15.   1
 1091.16    6.468    9.0    .29    7.36   1.35  13.0   2      1.7     2.9     5.2  900.   30.   19.4   .560   .689   15.   1
 1092.16    6.471    8.7   -.44   11.70   6.86  13.0   2      1.7     -.1      .5  900.    3.   21.1   .542   .542    4.   1
 1093.13    6.473    8.6   -.15    9.13   2.14  13.0   2      1.6     1.0     2.7  900.   16.   20.4   .535   .545    9.   1
 1094.13    6.475    8.0   -.88   17.24  99.99  13.0   2      1.7     -.9    -1.3  900.   -7.   21.6   .498   .498    0.   1
 1095.15    6.477    7.0  -1.47   15.19  99.99  13.0   1      1.7    -1.3    -1.3  900.   -7.   21.6   .722   .722    0.   1
 1096.15    6.479    5.0  -2.93   10.78  99.99  13.0   1      1.7     -.9    -1.3  900.   -7.   21.6   .516   .516    0.   1
 1097.15    6.480    4.2  -1.17    9.05  99.99  13.0   1       .9     -.8    -1.3  900.   -7.   21.6   .433   .433    0.   1
 1098.15    6.481    2.6  -2.35    5.60  99.99  13.0   1       .6     -.5    -1.3  900.   -7.   21.6   .268   .268    0.   1
 1099.15    6.482    1.0  -2.35    2.16  99.99  13.0   1       .3     -.2    -1.3  900.   -7.   21.6   .103   .103    0.   1
 1100.15    6.482    0.0  -1.47    0.00   6.86  13.0   1      0.0      .0      .7  900.    4.   21.1  -.000  -.000    5.   1
 1101.13    6.482     .1    .15     .11   2.72  13.0   1       .0      .0     2.0  900.   12.   20.5   .010   .020    8.   1
 1102.13    6.482     .6    .73     .59   1.76  13.0   1       .1      .3     3.5  900.   21.   20.1   .062   .114   11.   1
 1103.13    6.482    1.6   1.47    1.38   1.24  13.0   1       .3     1.4     5.8  900.   34.   19.1   .165   .285   17.   1
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   10/01/76                                    VEHICLE PERFORMANCE SIMULATION                                   PAC
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                              DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )
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                                  INST         CUM
  SEC.    MILES    MPH    ACC     MPG   BSFC   MPG GEAR   RDLD    HPW    HPE    RPM  TORQ   VAC     SR   ETA PCT.WOT
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1104.13   6.483    3.6   2.93    2.53    .83  12.9   1     .6     5.5   10.6   900.   62.  16.5   .371  .550  29.   1
1105.14   6.484    6.9   4.84    2.94    .57  12.9   1    1.3    16.6   25.6  1223.  110.  13.1   .524  .756  52.   1
1106.14   6.487   10.0   4.55    3.69    .54  12.9   1    1.9    22.8   30.7  1385.  117.  12.4   .671  .859  54.   1
1107.14   6.490   12.8   4.11    3.85    .51  12.9   2    2.6    26.6   46.4  1436.  148.   8.9   .499  .733  66.   1
1108.14   6.494   14.0   1.76    6.98    .66  12.9   2    2.9    14.1   18.8  1178.   84.  15.4   .666  .856  42.   1
1109.14   6.498   14.5    .73    9.79    .90  12.9   2    3.0     7.6   10.2  1017.   53.  17.8   .799  .900  27.   1
1110.17   6.502   16.0   2.20    6.69    .58  12.9   2    3.4    19.5   25.5  1316.  102.  13.9   .681  .864  49.   1
1111.18   6.507   18.1   3.08    5.61    .52  12.9   2    4.0    29.4   38.4  1508.  134.  10.4   .672  .860  61.   1
1112.18   6.512   20.0   2.79    6.19    .52  12.9   2    4.6    30.0   38.3  1544.  130.  10.7   .726  .883  59.   1
1113.17   6.518   21.0   1.47    8.91    .61  12.9   2    5.0    19.0   24.0  1397.   90.  15.1   .842  .903  45.   1
1114.14   6.523   21.2    .29   14.58    .90  12.9   3    5.0     7.8    9.9   949.   52.  17.8   .792  .898  26.   1
1115.12   6.529   21.3    .15   15.93    .99  12.9   3    5.1     6.5    8.3   959.   46.  18.3   .818  .902  23.   1
1116.09   6.535   21.4    .15   15.95    .99  12.9   3    5.1     6.6    8.4   962.   46.  18.3   .820  .902  23.   1
1117.10   6.541   21.7    .44   13.50    .82  12.9   3    5.2     9.5   12.1  1057.   60.  17.3   .757  .892  31.   1
1118.12   6.547   22.5   1.17   10.16    .61  12.9   3    5.5    17.4   22.6  1255.   95.  14.5   .661  .853  46.   1
1119.12   6.554   23.0    .73   12.06    .70  12.9   3    5.7    13.3   16.8  1168.   76.  16.1   .726  .883  39.   1
1120.13   6.560   23.8   1.17   10.40    .59  12.9   3    6.0    18.6   23.8  1288.   97.  14.4   .681  .864  47.   1
1121.13   6.567   24.5   1.03   11.06    .61  12.9   3    6.2    17.7   22.4  1276.   92.  14.8   .707  .876  45.   1
1122.13   6.574   25.0    .73   12.45    .67  12.9   3    6.4    14.7   18.4  1220.   79.  15.9   .755  .892  40.   1
1123.11   6.581   24.9   -.15   20.11   1.26  12.9   3    6.4     4.7    6.1   991.   32.  19.5   .926  .926  18.   1
1124.08   6.587   24.8   -.15   20.10   1.26  12.9   3    6.3     4.7    5.0   987.   32.  19.5   .926  .926  19.   1
1125.13   6.594   25.0    .29   15.17    .83  12.9   3    6.4     9.7   12.2  1104.   56.  17.5   .834  .903  31.   1
1126.12   6.601   25.4    .59   13.23    .71  12.9   3    6.6    13.4   16.7  1196.   73.  16.4   .783  .898  38.   1
1127.12   6.609   25.8    .59   13.30    .70  12.9   3    6.7    13.7   17.0  1207.   74.  16.3   .788  .899  33.   1
1128.13   6.616   26.0    .29   15.30    .82  12.9   3    6.8    10.3   12.9  1132.   60.  17.5   .845  .904  32.   1
1129.12   6.623   26.4    .59   13.40    .70  12.9   3    7.0    14.1   17.5  1224.   75.  16.2   .795  .900  39.   1
1130.13   6.630   26.6    .29   15.37    .81  12.9   3    7.1    10.6   13.3  1149.   61.  17.4   .853  .904  32.   1
1131.13   6.638   26.9    .44   14.34    .74  12.9   3    7.2    12.6   15.7  1199.   64.  16.8   .827  .903  36.   1
1132.11   6.645   27.0    .15   16.60    .87  12.9   3    7.2     9.1   11.5  1118.   54.  17.9   .890  .898  29.   1
1133.11   6.653   27.0   0.00   18.15   1.00  12.9   3    7.2     7.2    9.2  1090.   44.  16.7   .913  .913  25.   1
1134.11   6.660   27.0   0.00   18.15   1.00  12.9   3    7.2     7.2    9.2  1090.   44.  18.7   .913  .913  25.   1
1135.09   6.668   26.9   -.15   20.21   1.19  12.9   3    7.2     5.4    6.9  1062.   34.  19.5   .933  .933  21.   1
1136.07   6.675   26.8   -.15   20.20   1.20  12.9   3    7.2     5.3    6.8  1059.   34.  19.5   .933  .933  20.   1
1137.07   6.682   26.8   0.00   18.14   1.00  12.9   3    7.2     7.2    9.1  1084.   44.  19.7   .912  .912  25.   1
1138.07   6.690   26.5   -.44   26.27   2.34  12.9   3    7.0     1.7    2.7  1007.   14.  20.8   .970  .970  11.   1
1139.05   6.697   26.4   -.15   20.49   1.21  12.9   3    7.0     5.2    6.7  1045.   34.  19.5   .931  .931  20.   1
1140.04   6.704   26.0   -.59   34.70   8.50  12.9   3    6.8     -.1     .5   900.    3.  21.1  1.065  .939   4.   1
1141.04   6.711   25.5   -.73   44.14  99.99  12.9   3    6.9    -1.6    -.9   900.   -3.  21.3  1.044  .958   1.   1
1142.04   6.718   24.6  -1.32   53.02  99.99  12.9   3    7.4    -1.9   -1.3   900.   -7.  21.5  1.007  .993   0.   1
1143.05   6.725   23.5  -1.61   50.65  99.99  13.0   3    7.3    -1.8   -1.3   900.   -7.  21.6   .962  .962   0.   1
1144.05   6.731   21.5  -2.93   46.34  99.99  13.0   3    8.2    -1.7   -1.3   900.   -7.  21.6   .880  .880   0.   1
1145.05   6.737   20.0  -2.20   43.11  99.99  13.0   3    6.7    -1.5   -1.3   900.   -7.  21.6   .819  .819   0.   1
1146.03   6.742   17.5  -3.67   37.72  99.99  13.0   2    7.2    -2.0   -1.3   900.   -7.  21.6  1.089  .918   0.   1
1147.03   6.747   16.0  -2.20   34.49  99.99  13.0   2    5.1    -1.8   -1.3   900.   -7.  21.6   .996  .996   0.   1
1148.03   6.751   14.0  -2.93   30.19  99.99  13.0   2    5.0    -1.6   -1.3   900.   -7.  21.6   .871  .871   0.   1
1149.03   6.754   10.7  -4.84   23.06  99.99  13.0   2    4.9    -1.2   -1.3   900.   -7.  21.6   .666  .666   0.   1
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10/01/76                         VEHICLE PERFORMANCE SIMULATION                                    PAG
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                          DRIVING SCHEDULE ( UDCC01 )          USING ROUTE ( LEVEL   )
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                                       INST          CUM
   SEC.    MILES    MPH    ACC         MPG   BSFC    MPG GEAR    RDLD    HPW    HPE    RPM  TORQ    VAC     SR    ETA PCT.WOT
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1150.04    6.757    7.4  -4.84     15.95  99.99  13.0    1     3.3   -1.4   -1.3   900.   -7.   21.6   .764   .764    0.   1
1151.04    6.758    4.1  -4.84      8.84  99.99  13.0    1     1.8    -.8   -1.3   900.   -7.   21.6   .423   .423    0.   1
1152.04    6.759     .8  -4.84      1.72  99.99  13.0    1      .4    -.2   -1.3   900.   -7.   21.6   .083   .083    0.   1
1153.05    6.759    0.0  -1.17      0.00   6.86  13.0    1     0.0     .0     .7   900.    4.   21.1  -.000  -.000    5.   1
1154.05    6.759    0.0   0.00      0.00   6.86  13.0    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1155.05    6.759    0.0   0.00      0.00   6.86  13.0    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1156.05    6.759    0.0   0.00      0.00   6.86  13.0    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1157.05    6.759    0.0   0.00      0.00   6.86  13.0    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1158.05    6.759    0.0   0.00      0.00   6.86  13.0    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1159.05    6.759    0.0   0.00      0.00   6.86  13.0    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1160.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1161.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1162.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1163.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1164.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1165.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1166.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1167.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1168.05    6.759    0.0   0.00      0.00   6.86  12.9    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1169.05    6.760    2.1   3.08      1.50    .85  12.9    1      .4    3.3   10.1   900.   59.   17.1   .217   .376   27.   1
1170.05    6.761    5.4   4.84      2.50    .59  12.9    1     1.0   13.0   22.6  1145.  104.   13.6   .438   .671   49.   1
1171.05    6.763    6.7   4.84      3.35    .55  12.9    1     1.6   21.0   29.3  1325.  116.   12.5   .610   .822   54.   1
1172.05    6.765   12.0   4.84      3.75    .52  12.9    1     2.4   29.1   37.6  1529.  130.   10.8   .729   .884   59.   1
1173.05    6.769   15.3   4.84      3.04    .58  12.8    2     3.2   37.0   53.8  1599.  177.    6.0   .536   .766   76.   1
1174.05    6.774   18.6   4.84      3.16    .59  12.8    2     4.2   45.2   61.0  1711.  187.    5.4   .609   .822   79.   1
1175.05    6.779   21.1   3.67      4.74    .53  12.8    2     5.0   40.3   51.5  1686.  161.    7.6   .701   .874   73.   1
1176.05    6.786   23.0   2.79      6.35    .51  12.8    2     5.7   34.9   43.6  1653.  139.    9.7   .779   .897   62.   1
1177.05    6.792   23.5    .73     12.16    .69  12.8    3     5.8   13.6   17.2  1182.   76.   16.1   .733   .985   39.   1
1178.05    6.799   23.0   -.73     40.43  99.99  12.8    3     5.9   -1.7   -1.2   900.   -7.   21.3   .942   .942    0.   1
1179.06    6.805   22.5   -.73     48.50  99.99  12.8    3     5.7   -1.7   -1.3   900.   -7.   21.6   .921   .921    0.   1
1180.06    6.811   20.0  -3.67     43.11  99.99  12.8    3     8.4   -1.5   -1.3   900.   -7.   21.6   .819   .819    0.   1
1181.07    6.816   16.7  -4.84     36.00  99.99  12.8    2     6.0   -1.9   -1.3   900.   -7.   21.6  1.039   .962    0.   1
1182.07    6.820   13.4  -4.84     28.88  99.99  12.8    2     6.3   -1.5   -1.3   900.   -7.   21.6   .834   .834    0.   1
1183.07    6.823   10.1  -4.84     21.77  99.99  12.8    2     4.6   -1.2   -1.3   900.   -7.   21.6   .629   .629    0.   1
1184.08    6.826    6.8  -4.84     14.66  99.99  12.8    1     3.1   -1.3   -1.3   900.   -7.   21.6   .702   .702    0.   1
1185.08    6.827    3.5  -4.84      7.54  99.99  12.8    1     1.6    -.7   -1.3   900.   -7.   21.6   .361   .361    0.   1
1186.08    6.828     .2  -4.84       .43  99.99  12.8    1      .1    -.0   -1.3   900.   -7.   21.6   .021   .021    0.   1
1187.09    6.828    0.0   -.29      0.00   6.86  12.8    1     0.0    -.0     .7   900.    4.   21.1  -.000  -.000    5.   1
1188.09    6.828    0.0   0.00      0.00   6.86  12.8    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1189.09    6.828    0.0   0.00      0.00   6.86  12.8    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1190.09    6.828    0.0   0.00      0.00   6.86  12.8    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1191.09    6.828    0.0   0.00      0.00   6.86  12.8    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1192.09    6.828    0.0   0.00      0.00   6.86  12.8    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1193.09    6.828    0.0   0.00      0.00   6.86  12.8    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1194.09    6.828    0.0   0.00      0.00   6.86  12.8    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
1195.09    6.828    0.0   0.00      0.00   6.86  12.8    1     0.0    0.0     .7   900.    4.   21.1  0.000  0.000    5.   1
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   10/01/76                                     VEHICLE PERFORMANCE SIMULATION                                    PAG
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                                   DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )
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                                       INST         CUM
    SEC.    MILES    MPH    ACC        MPG   BSFC   MPG GEAR    ROLD     HPW     HPE    RPM  TORQ    VAC     SR    ETA PCT.WOT
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 1196.09    6.828    0.0   0.00       0.00   6.86  12.8   1      0.0     0.0      .7   900.    4.   21.1  0.000  0.000     5.  1
 1197.10    6.828     .2    .29        .22   2.39  12.8   1       .0      .1     2.3   900.   14.   20.5   .021   .039     9.  1
 1198.10    6.828    1.5   1.91       1.24   1.10  12.8   1       .3     1.6     6.6   900.   40.   19.6   .155   .273    19.  1
 1199.10    6.829    3.5   2.93       2.47    .63  12.7   1       .6     5.3    10.5   900.   61.   16.9   .361   .577    28.  1
 1200.11    6.830    6.5   4.40       3.03    .60  12.7   1      1.2    14.3    22.0  1164.   99.   14.0   .519   .751    47.  1
 1201.11    6.832    9.8   4.84       3.50    .54  12.7   1      1.9    23.7    32.3  1395.  121.   11.9   .652   .849    56.  1
 1202.11    6.835   12.0   3.23       4.58    .54  12.7   2      2.4    20.1    30.0  1303.  121.   12.0   .516   .749    56.  1
 1203.11    6.839   12.9   1.32       7.58    .76  12.7   2      2.6    10.4    12.9  1066.   68.   16.6   .678   .862    34.  1
 1204.08    6.842   13.0    .15      11.45   1.33  12.7   2      2.6     3.5     5.3   900.   31.   19.4   .809   .819    16.  1
 1205.08    6.846   12.6   -.59      21.15  99.99  12.7   2      2.6     -.7     -.3   900.   -2.   21.2   .784   .784     2.  1
 1206.09    6.849   12.8    .29      10.91   1.20  12.7   2      2.6     4.3     6.0   900.   35.   19.0   .797   .853    17.  1
 1207.09    6.853   13.1    .44      10.75   1.09  12.7   2      2.7     5.3     6.9   900.   40.   18.6   .815   .902    19.  1
 1208.09    6.857   13.1   0.00      12.15   1.60  12.7   2      2.7     2.7     4.2   900.   24.   19.9   .815   .815    13.  1
 1209.12    6.861   14.0   1.32       7.88    .74  12.7   2      2.9    11.3    14.9  1107.   71.   16.5   .708   .876    36.  1
 1210.13    6.865   15.5   2.20       6.60    .58  12.7   2      3.3    18.8    24.9  1298.  101.   14.0   .669   .858    49.  1
 1211.13    6.869   17.0   2.20       6.85    .57  12.7   2      3.7    20.7    26.9  1353.  104.   13.7   .704   .875    50.  1
 1212.12    6.874   18.6   2.35       6.79    .55  12.7   2      4.2    24.1    30.8  1435.  113.   12.8   .726   .883    53.  1
 1213.13    6.879   19.7   1.61       8.42    .60  12.7   2      4.5    19.0    24.0  1370.   92.   14.9   .805   .901    45.  1
 1214.13    6.885   21.0   1.91       7.90    .56  12.7   2      5.0    23.2    29.2  1464.  105.   13.7   .804   .901    50.  1
 1215.13    6.891   21.5    .73      11.75    .72  12.7   3      5.1    12.3    15.7  1127.   73.   16.3   .703   .874    37.  1
 1216.13    6.897   21.8    .44      13.52    .82  12.7   3      5.2     9.6    12.1  1059.   60.   17.3   .759   .893    31.  1
 1217.13    6.903   21.8   0.00      17.79   1.12  12.7   3      5.2     5.2     6.6   920.   39.   18.8   .873   .903    19.  1
 1218.13    6.909   21.5   -.44      25.35   3.13  12.7   3      5.1      .8     1.7   900.   10.   20.7   .880   .860     7.  1
 1219.13    6.915   21.2   -.44      25.09   3.19  12.7   3      5.0      .8     1.6   900.   10.   20.7   .868   .868     7.  1
 1220.17    6.921   21.5    .44      13.46    .82  12.7   3      5.1     9.4    12.0  1052.   60.   17.3   .753   .891    30.  1
 1221.17    6.927   21.8    .44      13.52    .82  12.7   3      5.2     9.6    12.1  1059.   60.   17.3   .759   .893    31.  1
 1222.19    6.933   22.0    .29      14.71    .89  12.7   3      5.3     8.2    10.4  1022.   53.   17.8   .793   .900    27.  1
 1223.16    6.939   21.9   -.15      19.46   1.37  12.7   3      5.3     3.8     5.1   900.   30.   19.4   .897   .897    15.  1
 1224.17    6.945   21.7   -.29      21.50   1.62  12.7   3      5.2     2.3     3.4   900.   20.   20.1   .889   .889    11.  1
 1225.19    6.952   21.5   -.29      21.35   1.83  12.7   3      5.1     2.3     3.4   900.   20.   20.1   .880   .880    11.  1
 1226.19    6.958   21.5   0.00      17.73   1.13  12.7   3      5.1     5.1     6.6   912.   38.   18.8   .869   .904    19.  1
 1227.16    6.963   21.4   -.15      19.07   1.35  12.7   3      5.1     3.6     5.0   900.   29.   19.5   .876   .876    15.  1
 1228.16    6.969   20.1  -1.91      43.32  99.99  12.7   3      6.3    -1.5    -1.3   900.   -7.   21.6   .823   .823     0.  1
 1229.16    6.975   19.5   -.88      42.03  99.99  12.7   3      4.9    -1.5    -1.3   900.   -7.   21.6   .799   .799     0.  1
 1230.16    6.980   19.2   -.44      23.29   3.65  12.7   3      4.4      .5     1.4   900.    8.   20.8   .786   .786     6.  1
 1231.19    6.986   19.6    .59      12.07    .79  12.7   3      4.5     9.8    12.6  1041.   64.   16.9   .694   .870    32.  1
 1232.20    6.991   19.8    .29      14.31    .93  12.7   3      4.6     7.2     9.2   962.   50.   18.0   .759   .893    25.  1
 1233.22    6.997   20.0    .29      14.35    .93  12.7   3      4.6     7.3     9.3   967.   50.   17.9   .763   .894    25.  1
 1234.22    7.002   19.5   -.73      42.03  99.99  12.7   3      4.7    -1.5    -1.3   900.   -7.   21.6   .799   .799     0.  1
 1235.24    7.007   17.5  -2.93      37.72  99.99  12.7   2      6.4    -2.0    -1.3   900.   -7.   21.6  1.089   .918     0.  1
 1236.24    7.012   15.5  -2.93      33.41  99.99  12.7   2      5.6    -1.8    -1.3   900.   -7.   21.6   .965   .965     0.  1
 1237.24    7.016   13.0  -3.67      28.02  99.99  12.8   2      5.2    -1.5    -1.3   900.   -7.   21.6   .809   .809     0.  1
 1238.24    7.019   10.0  -4.40      21.55  99.99  12.8   2      4.3    -1.1    -1.3   900.   -7.   21.6   .622   .622     0.  1
 1239.24    7.022    8.0  -2.93      17.24  99.99  12.8   2      2.7     -.9    -1.3   900.   -7.   21.6   .498   .498     0.  1
 1240.26    7.024    6.0  -2.93      12.93  99.99  12.8   1      2.0    -1.1    -1.3   900.   -7.   21.6   .619   .619     0.  1
 1241.26    7.025    4.0  -2.93       8.62  99.99  12.8   1      1.3     -.8    -1.3   900.   -7.   21.6   .413   .413     0.  1
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  10/01/76                                  VEHICLE PERFORMANCE SIMULATION                                          PAG
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                                 DRIVING SCHEDULE ( UDCCO1 )          USING ROUTE ( LEVEL  )
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                                     INST          CUM
    SEC.     MILES    MPH    ACC      MPG    BSFC  MPG GEAR    RDLD     HPW     HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
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 1242.26     7.026    2.5  -2.20     5.39   99.99 12.8   1       .7     -.5    -1.3  900.   -7.   21.6   .258   .258     0.   1
 1243.26     7.026     .7  -2.64     1.51   99.99 12.8   1       .2     -.1    -1.3  900.   -7.   21.6   .072   .072     0.   1
 1244.26     7.026    0.0  -1.03     0.00    6.86 12.7   1      0.0      .0      .7  900.    4.   21.1  -.000  -.000     5.   1
 1245.26     7.026    0.0   0.00     0.00    6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.   1
 1246.26     7.026    0.0   0.00     0.00    6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.   1
 1247.26     7.026    0.0   0.00     0.00    6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.   1
 1248.26     7.026    0.0   0.00     0.00    6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.   1
 1249.26     7.026    0.0   0.00     0.00    6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.   1
 1250.26     7.026    0.0   0.00     0.00    6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.   1
 1251.26     7.026    0.0   0.00     0.00    6.86 12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.   1
 1252.25     7.027    1.0   1.47      .87    1.29 12.7   1       .2      .5     5.5  900.   32.   19.2   .103   .187    16.   1
 1253.25     7.027    1.0   0.00     1.17    2.98 12.7   1       .2      .2     1.8  900.   10.   20.7   .103   .170     7.   1
 1254.25     7.027    1.0   0.00     1.17    2.98 12.7   1       .2      .2     1.8  900.   10.   20.7   .103   .170     7.   1
 1255.25     7.027    1.0   0.00     1.17    2.98 12.7   1       .2      .2     1.8  900.   10.   20.7   .103   .170     7.   1
 1256.25     7.028    1.0   0.00     1.17    2.98 12.7   1       .2      .2     1.8  900.   10.   20.7   .103   .170     7.   1
 1257.25     7.028    1.6    .88     1.48    1.58 12.7   1       .3      .9     4.2  900.   25.   19.8   .165   .277    13.   1
 1258.26     7.029    3.0   2.05     2.37     .99 12.7   1       .5     3.4     7.9  900.   46.   18.2   .310   .494    22.   1
 1259.25     7.030    4.0   1.47     3.31    1.11 12.7   1       .7     3.4     6.7  900.   39.   18.7   .413   .600    19.   1
 1260.25     7.031    5.0   1.47     4.06    1.06 12.7   1       .9     4.3     7.1  900.   42.   18.5   .516   .704    20.   1
 1261.25     7.032    6.3   1.91     4.61     .89 12.7   1      1.2     6.7     9.5  912.   55.   17.5   .641   .842    25.   1
 1262.25     7.034    8.0   2.49     4.60     .74 12.7   1      1.5    10.7    14.4 1076.   70.   16.4   .689   .868    35.   1
 1263.25     7.037   10.0   2.93     4.76     .64 12.6   1      1.9    15.4    20.2 1244.   65.   15.3   .747   .889    43.   1
 1264.26     7.040   10.5    .73     7.72    1.12 12.6   1      2.0     5.6     7.5 1053.   37.   19.2   .926   .926    22.   1
 1265.25     7.043    9.5  -1.47    20.48   99.99 12.6   1      2.4    -1.8    -1.3  900.   -7.   21.6   .980   .960     0.   1
 1266.25     7.045    8.5  -1.47    18.32   99.99 12.6   1      2.1    -1.6    -1.3  900.   -7.   21.6   .877   .877     0.   1
 1267.25     7.047    7.6  -1.32    16.33   99.99 12.6   1      1.8    -1.4    -1.3  900.   -7.   21.5   .784   .784     0.   1
 1268.27     7.050    8.8   1.76     5.59     .94 12.6   1      1.7     8.8    11.7 1045.   59.   17.4   .782   .898    30.   1
 1269.28     7.052   11.0   3.23     4.75     .60 12.5   1      2.2    18.5    23.9 1330.   94.   14.6   .768   .895    46.   1
 1270.29     7.056   14.0   4.40     3.52     .53 12.6   2      2.9    31.0    46.0 1505.  160.    7.6   .521   .754    70.   1
 1271.29     7.060   17.0   4.40     3.60     .56 12.6   2      3.7    37.8    52.0 1613.  169.    6.7   .591   .809    73.   1
 1272.29     7.065   19.5   3.67     4.76     .52 12.6   2      4.5    37.1    48.2 1628.  156.    7.7   .671   .859    69.   1
 1273.29     7.071   21.0   2.20     7.22     .54 12.6   2      5.0    26.0    32.7 1502.  114.   12.6   .783   .898    54.   1
 1274.30     7.077   21.8   1.17    10.02     .61 12.6   3      5.2    16.8    22.0 1236.   93.   14.5   .650   .847    46.   1
 1275.30     7.083   22.2    .59    12.64     .76 12.6   3      5.4    11.3    14.3 1112.   68.   16.7   .736   .686    35.   1
 1276.31     7.089   23.0   1.17    10.26     .66 12.6   3      5.7    17.9    23.0 1268.   95.   14.5   .669   .858    47.   1
 1277.31     7.096   23.6    .88    11.50     .65 12.6   3      5.9    15.3    19.4 1219.   84.   15.5   .713   .878    42.   1
 1278.32     7.103   24.1    .73    12.27     .69 12.6   3      6.1    14.1    17.7 1197.   77.   16.0   .742   .868    40.   1
 1279.31     7.109   24.5    .59    13.10     .72 12.6   3      6.2    12.8    16.0 1170.   72.   16.5   .772   .896    37.   1
 1280.31     7.116   24.5   0.00    18.06    1.04 12.6   3      6.2     6.2     8.1 1003.   42.   18.7   .900   .900    22.   1
 1281.32     7.123   24.0   -.73    41.94   99.99 12.6   3      6.3    -1.7    -1.1  900.   -6.   21.3   .983   .983     0.   1
 1282.32     7.129   23.5   -.73    41.19   99.99 12.6   3      6.1    -1.7    -1.2  900.   -7.   21.3   .962   .962     0.   1
 1283.32     7.136   23.5   0.00    18.00    1.06 12.6   3      5.6     5.8     7.6  969.   41.   18.7   .894   .896    21.   1
 1284.32     7.143   23.5   0.00    18.00    1.06 12.6   3      5.8     5.8     7.6  969.   41.   18.7   .894   .896    21.   1
 1285.32     7.149   23.5   0.00    18.00    1.06 12.6   3      5.8     5.8     7.6  969.   41.   18.7   .894   .896    21.   1
 1286.32     7.156   23.5   0.00    18.00    1.06 12.6   3      5.8     5.8     7.6  969.   41.   18.7   .894   .896    21.   1
 1287.32     7.162   23.5   0.00    18.00    1.06 12.6   3      5.8     5.8     7.6  969.   41.   18.7   .894   .896    21.   1
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10/01/76                                  VEHICLE PERFORMANCE SIMULATION                                  PAG

                                    DRIVING SCHEDULE ( UDC001 )        USING ROUTE ( LEVEL  )

                                      INST          CUM
     SEC.    MILES    MPH     ACC      MPG   BSFC   MPG GEAR    RDLD     HPW     HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
---------------------------------------------------------------------------------------------------------------------------

   1288.36   7.169   24.0     .73    12.25    .69  12.6   3      6.0    14.0    17.6 1195.   77.   16.0   .740   .888    40.  1
   1289.34   7.175   24.1     .15    16.33    .93  12.6   3      6.1     7.7     9.8 1037.   50.   18.1   .857   .904    26.  1
   1290.35   7.182   24.5     .59    13.10    .72  12.6   3      6.2    12.8    16.0 1170.   72.   16.5   .772   .896    37.  1
   1291.36   7.189   24.7     .29    15.13    .84  12.6   3      6.3     9.6    12.0 1096.   58.   17.6   .830   .903    30.  1
   1292.36   7.196   25.0     .44    14.07    .77  12.6   3      6.4    11.4    14.3 1147.   65.   17.0   .803   .901    34.  1
   1293.36   7.203   25.4     .59    13.23    .71  12.6   3      6.6    13.4    16.7 1196.   73.   16.4   .783   .898    38.  1
   1294.37   7.210   25.6     .29    15.25    .82  12.6   3      6.7    10.0    12.6 1121.   59.   17.5   .842   .903    31.  1
   1295.34   7.217   25.7     .15    16.51    .90  12.6   3      6.7     8.5    10.7 1081.   52.   18.0   .876   .903    28.  1
   1296.35   7.224   26.0     .44    14.21    .75  12.6   3      6.6    12.0    15.0 1175.   67.   16.9   .816   .902    35.  1
   1297.36   7.232   26.2     .29    15.32    .81  12.6   3      6.9    10.4    13.0 1138.   60.   17.4   .849   .904    32.  1
   1298.39   7.239   27.0    1.17    10.82    .57  12.6   3      7.2    21.6    27.0 1373.  103.   13.8   .725   .882    50.  1
   1299.39   7.247   27.8    1.17    10.90    .57  12.6   3      7.6    22.4    27.8 1394.  105.   13.7   .735   .886    50.  1
   1300.39   7.255   28.3     .73    12.96    .64  12.6   3      7.8    17.2    21.2 1310.   85.   15.4   .796   .900    43.  1
   1301.39   7.263   29.0    1.03    11.65    .58  12.6   3      8.1    21.7    26.7 1394.  101.   14.1   .767   .895    49.  1
   1302.37   7.271   29.1     .15    16.70    .84  12.6   3      8.2    10.2    12.8 1169.   57.   17.8   .902   .902    32.  1
   1303.35   7.279   29.0    -.15    20.22   1.13  12.6   3      8.1     6.2     7.8 1136.   36.   19.5   .941   .941    23.  1
   1304.34   7.286   28.0   -1.47    50.35  99.99  12.6   3      9.1    -2.1    -1.3  900.   -7.   21.6  1.147   .872     0.  1
   1305.34   7.294   24.7   -4.84    53.24  99.99  12.6   3     12.7    -1.9    -1.3  900.   -7.   21.6  1.011   .989     0.  1
   1306.34   7.300   21.4   -4.34    46.13  99.99  12.7   3     10.6    -1.6    -1.3  900.   -7.   21.6   .876   .876     0.  1
   1307.34   7.306   18.1   -4.84    39.01  99.99  12.7   3      8.8    -1.4    -1.3  900.   -7.   21.6   .741   .741     0.  1
   1308.36   7.310   14.8   -4.84    31.90  99.99  12.7   2      7.0    -1.7    -1.3  900.   -7.   21.6   .921   .921     0.  1
   1309.36   7.314   11.5   -4.84    24.79  99.99  12.7   2      5.3    -1.3    -1.3  900.   -7.   21.6   .716   .716     0.  1
   1310.36   7.317    8.2   -4.84    17.67  99.99  12.7   2      3.7     -.9    -1.3  900.   -7.   21.6   .510   .510     0.  1
   1311.37   7.318    4.9   -4.84    10.56  99.99  12.7   1      2.2     -.9    -1.3  900.   -7.   21.6   .506   .506     0.  1
   1312.37   7.319    1.6   -4.84     3.45  99.99  12.7   1       .7     -.3    -1.3  900.   -7.   21.6   .165   .165     0.  1
   1313.36   7.320    0.0   -2.35     0.00   6.86  12.7   1      0.0      .0      .7  900.    4.   21.1  -.000  -.000     5.  1
   1314.36   7.320    0.0    0.00     0.00   6.86  12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1315.36   7.320    0.0    0.00     0.00   6.86  12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1316.36   7.320    0.0    0.00     0.00   6.86  12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1317.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1318.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1319.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1320.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1321.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1322.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1323.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1324.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1325.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1326.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1327.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1328.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1329.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1330.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1331.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1332.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
   1333.36   7.320    0.0    0.00     0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000     5.  1
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  10/01/76                              VEHICLE PERFORMANCE SIMULATION                                        PAG

                                  DRIVING SCHEDULE ( UDC001 )      USING ROUTE ( LEVEL  )

                                    INST          CUM
    SEC.    MILES    MPH     ACC     MPG   BSFC   MPG GEAR    RDLD     HPW     HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
 ----------------------------------------------------------------------------------------------------------------------------

 1288.36    7.169   24.0     .73   12.25    .69  12.6   3      6.0    14.0    17.6 1195.   77.   16.0   .740   .889     40.   1
 1289.34    7.175   24.1     .15   16.33    .93  12.6   3      6.1     7.7     9.8 1037.   50.   18.1   .857   .904     26.   1
 1290.35    7.182   24.5     .59   13.10    .72  12.6   3      6.2    12.6    16.0 1170.   72.   16.5   .772   .896     37.   1
 1291.36    7.189   24.7     .29   15.13    .84  12.6   3      6.3     9.6    12.0 1096.   58.   17.6   .830   .903     30.   1
 1292.36    7.196   25.0     .44   14.07    .77  12.6   3      6.4    11.4    14.3 1147.   65.   17.0   .803   .901     34.   1
 1293.36    7.203   25.4     .59   13.23    .71  12.6   3      6.6    13.4    16.7 1196.   73.   16.4   .783   .898     38.   1
 1294.37    7.210   25.6     .29   15.25    .82  12.6   3      6.7    10.0    12.6 1121.   59.   17.5   .842   .903     31.   1
 1295.34    7.217   25.7     .15   16.51    .90  12.6   3      6.7     6.5    10.7 1081.   52.   18.0   .876   .903     28.   1
 1296.35    7.224   26.0     .44   14.21    .75  12.6   3      6.6    12.0    15.0 1175.   67.   16.9   .816   .902     35.   1
 1297.36    7.232   26.2     .29   15.32    .81  12.6   3      6.9    10.4    13.0 1138.   60.   17.4   .849   .904     32.   1
 1298.39    7.239   27.0    1.17   10.82    .57  12.6   3      7.2    21.6    27.0 1373.  103.   13.8   .725   .882     50.   1
 1299.39    7.247   27.8    1.17   10.90    .57  12.6   3      7.6    22.4    27.8 1394.  105.   13.7   .735   .886     50.   1
 1300.39    7.255   28.3     .73   12.96    .64  12.6   3      7.8    17.2    21.2 1310.   85.   15.4   .796   .900     43.   1
 1301.39    7.263   29.0    1.03   11.65    .58  12.6   3      8.1    21.7    26.7 1394.  101.   14.1   .767   .895     49.   1
 1302.37    7.271   29.1     .15   16.70    .84  12.6   3      8.2    10.2    12.6 1169.   57.   17.8   .902   .902     32.   1
 1303.35    7.279   29.0    -.15   20.22   1.13  12.6   3      8.1     6.2     7.6 1136.   36.   19.5   .941   .941     23.   1
 1304.34    7.286   28.0   -1.47   50.35  99.99  12.6   3      9.1    -2.1    -1.3  900.   -7.   21.6  1.147   .872      0.   1
 1305.34    7.294   24.7   -4.84   53.24  99.99  12.6   3     12.7    -1.9    -1.3  900.   -7.   21.6  1.011   .989      0.   1
 1306.34    7.300   21.4   -4.34   46.13  99.99  12.7   3     10.6    -1.6    -1.3  900.   -7.   21.6   .876   .876      0.   1
 1307.34    7.306   18.1   -4.84   39.01  99.99  12.7   3      8.8    -1.4    -1.3  900.   -7.   21.6   .741   .741      0.   1
 1308.36    7.310   14.8   -4.84   31.90  99.99  12.7   2      7.0    -1.7    -1.3  900.   -7.   21.6   .921   .921      0.   1
 1309.36    7.314   11.5   -4.84   24.79  99.99  12.7   2      5.3    -1.3    -1.3  900.   -7.   21.6   .716   .716      0.   1
 1310.36    7.317    8.2   -4.84   17.67  99.99  12.7   2      3.7     -.9    -1.3  900.   -7.   21.6   .510   .510      0.   1
 1311.37    7.318    4.9   -4.84   10.56  99.99  12.7   1      2.2     -.9    -1.3  900.   -7.   21.6   .506   .506      0.   1
 1312.37    7.319    1.6   -4.84    3.45  99.99  12.7   1       .7     -.3    -1.3  900.   -7.   21.6   .165   .165      0.   1
 1313.36    7.320    0.0   -2.35    0.00   6.86  12.7   1      0.0      .0      .7  900.    4.   21.1  -.000  -.000      5.   1
 1314.36    7.320    0.0    0.00    0.00   6.86  12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1315.36    7.320    0.0    0.00    0.00   6.86  12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1316.36    7.320    0.0    0.00    0.00   6.86  12.7   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1317.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1318.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1319.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1320.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1321.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1322.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1323.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1324.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1325.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1326.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1327.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1328.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1329.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1330.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1331.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1332.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
 1333.36    7.320    0.0    0.00    0.00   6.86  12.6   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000      5.   1
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10/01/76                                   VEHICLE PERFORMANCE SIMULATION                                          PAG
                                 DRIVING SCHEDULE ( UDC001 )          USING ROUTE ( LEVEL  )

      SEC.    MILES    MPH     ACC    INST    BSFC   CUM  GEAR    ROLD     HPW      HPE    RPM  TORQ    VAC     SR    ETA PCT.WOT
                                       MPG           MPG
-------------------------------------------------------------------------------------------------------------------------------
   1334.36    7.320    0.0    0.00    0.00    6.86  12.6    1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000     5.  1
   1335.36    7.320    0.0    0.00    0.00    6.86  12.6    1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000     5.  1
   1336.36    7.320    0.0    0.00    0.00    6.86  12.6    1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000     5.  1
   1337.36    7.320    0.0    0.00    0.00    6.86  12.6    1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000     5.  1
   1338.36    7.320    1.5    2.20    1.20    1.02  12.5    1       .3     1.8      7.6   900.   44.   18.3   .155   .275    21.  1
   1339.37    7.321    4.8    4.84    2.31     .61  12.5    1       .9    11.5     21.1  1109.  100.   13.9   .402   .630    47.  1
   1340.37    7.322    8.1    4.84    3.22     .55  12.5    1      1.5    19.5     28.1  1294.  114.   12.7   .581   .802    54.  1
   1341.37    7.325   11.4    4.84    3.60     .53  12.5    1      2.3    27.6     36.3  1491.  128.   11.1   .710   .877    59.  1
   1342.41    7.329   13.2    2.64    5.50     .57  12.5    2      2.7    16.6     26.1  1273.  108.   13.3   .561   .602    51.  1
   1343.40    7.333   15.1    2.79    5.65     .54  12.5    2      3.2    22.4     30.4  1356.  118.   12.3   .624   .831    55.  1
   1344.41    7.337   16.8    2.49    6.34     .55  12.5    2      3.7    22.7     29.7  1365.  113.   12.8   .679   .863    53.  1
   1345.41    7.342   18.3    2.20    7.03     .56  12.5    2      4.1    22.4     28.7  1403.  127.   13.4   .731   .884    51.  1
   1346.41    7.347   19.5    1.76    8.09     .59  12.5    2      4.5    20.1     25.4  1364.   96.   14.5   .789   .899    47.  1
   1347.41    7.353   20.3    1.17    9.57     .66  12.5    2      4.7    15.5     19.7  1321.   78.   16.0   .861   .904    40.  1
   1348.41    7.359   21.3    1.47    8.95     .60  12.5    2      5.1    19.3     24.4  1408.   91.   15.0   .847   .904    45.  1
   1349.40    7.364   21.9     .88   11.15     .67  12.5    3      5.3    14.0     18.0  1174.   80.   15.7   .688   .667    41.  1
   1350.41    7.371   22.1     .20   14.73     .89  12.5    3      5.3     8.3     10.5  1025.   54.   17.8   .795   .900    27.  1
   1351.41    7.377   22.4     .44   13.65     .81  12.5    3      5.4     9.9     12.5  1074.   61.   17.2   .769   .895    31.  1
   1352.40    7.383   22.0    -.59   34.16   53.29  12.5    3      5.4     -.5       .1   900.    0.   21.2   .901   .901     3.  1
   1353.40    7.389   21.6    -.59   34.08126.45  12.5    3      5.2     -.6       .0   900.    0.   21.2   .885   .885     3.  1
   1354.40    7.395   21.1    -.73   45.48   99.99  12.5    3      5.2    -1.6     -1.3   900.   -7.   21.6   .864   .864     0.  1
   1355.40    7.401   20.5    -.88   44.19   99.99  12.5    3      5.2    -1.6     -1.3   900.   -7.   21.6   .839   .839     0.  1
   1356.41    7.406   20.0    -.73   43.11   99.99  12.5    3      4.9    -1.5     -1.3   900.   -7.   21.6   .819   .819     0.  1
   1357.40    7.412   19.6    -.59   32.68   99.99  12.5    3      4.6     -.7      -.2   900.   -1.   21.2   .803   .803     3.  1
   1358.40    7.417   18.5   -1.61   38.88   99.99  12.5    3      5.4    -1.4     -1.3   900.   -7.   21.6   .759   .758     0.  1
   1359.42    7.422   17.5   -1.47   37.72   99.99  12.5    2      4.9    -2.0     -1.3   900.   -7.   21.6  1.089   .918     0.  1
   1360.42    7.427   16.5   -1.47   35.57   99.99  12.5    2      4.5    -1.9     -1.3   900.   -7.   21.6  1.027   .974     0.  1
   1361.42    7.431   15.5   -1.47   33.41   99.99  12.5    2      4.2    -1.8     -1.3   900.   -7.   21.6   .965   .965     0.  1
   1362.42    7.435   14.0   -2.20   30.18   99.99  12.5    2      4.4    -1.6     -1.3   900.   -7.   21.6   .871   .871     0.  1
   1363.42    7.439   11.0   -4.40   23.71   99.99  12.5    2      4.8    -1.3     -1.3   900.   -7.   21.6   .685   .685     0.  1
   1364.42    7.442    8.0   -4.40   17.24   99.99  12.5    2      3.4     -.9     -1.3   900.   -7.   21.6   .498   .498     0.  1
   1365.43    7.443    5.2   -4.11   11.21   99.99  12.5    1      2.1    -1.0     -1.3   900.   -7.   21.6   .537   .537     0.  1
   1366.43    7.445    2.5   -3.96    5.39   99.99  12.5    1      1.0     -.5     -1.3   900.   -7.   21.6   .259   .259     0.  1
   1367.43    7.445    0.0   -3.67    0.00    6.86  12.5    1      0.0      .0       .7   900.    4.   21.1  -.000  -.000     5.  1
   1368.43    7.445    0.0    0.00    0.00    6.86  12.5    1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000     5.  1
   1369.43    7.445    0.0    0.00    0.00    6.86  12.5    1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000     5.  1
   1370.43    7.445    0.0    0.00    0.00    6.86  12.5    1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000     5.  1
   1371.43    7.445    0.0    0.00    0.00    6.86  12.5    1      0.0     0.0       .7   900.    4.   21.1  0.000  0.000     5.  1
```

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SHIFT FREQUENCY DATA                                          10/01/75

 TOTAL SHIFTS  =     94     SHIFTS PER MILE  =  12.6     NUMB GEARS  =  3

 GEAR INTO     1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20
 UPSHIFTS      0 18 29  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 DOWNSHIFTS   18 29  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

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           VEHICLE PERFORMANCE SIMULATION    10/01/76
           ***********************************************

RUN TITLE = CASE 9(A)    GMC 350, AUTO, 5000-LB CLASS, FTP URBAN, 3.08 IN

SCHEDULE AVERAGES        FUEL ECONOMY       = 12.53 MPG
                         WORK PER MILE      =   .62 HP-HR/MI
                         AVG SP FUEL CONS   =   .80 LBS/HP-HR
                         AVG SPEED          = 19.5  MPH

TOTALS                             TOTAL           PERCENT OF TOTAL
           VARIABLE  (UNITS)  AMOUNT  (CRUISE  ACCEL   DECEL    IDLE )  (BRAKES)
           --------  -------  ------   ------  ------  ------  ------   ------
           TIME      (SECS)  1371.4      8.0    39.8    34.5    17.7
           DISTANCE  (MILES)    7.4     12.1    46.9    41.0     0.0
           ENERGY    (HP-HR)    4.61     8.0    83.7     7.3     1.0
           FUEL      (LBS)      3.67     6.8    64.3    18.3     8.7       6.0

ENERGY SUPPLY                                   HP-HR
                                                -----
                    (1) ENGINE               =  4.61
                    (2) KINETIC ENERGY       =  0.00
                    (3) POTENTIAL ENERGY     =  0.00
                    (4) ROTATING INERTIA     =  0.00

BREAKDOWN                        PERCENT ENGINE HP-HR
                                 --------------------
                    (1) ACCESSORIES          =   8.65
                    (2) TORQUE CONVERTER     =  12.50
                    (3) GEAR BOX             =    .53
                    (4) DIFFERENTIAL         =   3.36
                    (5) TIRE SLIP            =   5.66
                                   3+4+5     =   9.64
                                 2+3+4+5     =  22.15
                    (6) AERODYNAMIC DRAG     =  13.87
                    (7) ROLLING RESIST       =  31.76
                          SUBTOTAL 1- 7      =  76.43
                    (8) BRAKES               =  20.87
                    (9) ENGINE MOTORING      =   2.72
                          SUBTOTAL 1- 9      = 100.03
                   (10) OTHER ENERGY         =   0.00
                             TOTAL 1-10      = 100.03

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = UDC7C1         ROUTE NAME              = LEVEL
  VEHICLE NAME          = V5000C8        ENGINE NAME             = GM350M
  CONVERTER NAME        = CODY2          SHIFT LOGIC NAME        = TEST2
  WEIGHT (LBS)          =  5000.         STROKE (INCHES)         =   3.48
  DISPLACEMENT (CU IN)  =  349.8         REAR AXLE RATIO         =   3.08
  WIND VELOCITY (MPH)   =    0.0         FUEL DENSITY (LB/GAL)   =   6.18
  AERO DRAG  = 24.20 ,   .48             TIRES  =  12.00 ,  .09 ,  .93
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10/01/76                                   VEHICLE PERFORMANCE SIMULATION                                      PAC

                              DRIVING SCHEDULE ( HDC002 )           USING ROUTE ( LEVEL  )

   SEC.   MILES    MPH    ACC    INST    BSFC   CUM  GEAR   RDLD    HPW    HPE   RPM  TORQ   VAC    SR    ETA PCT.WOT
                                  MPG           MPG
-------------------------------------------------------------------------------------------------------------------
   0.00   0.000    0.0   0.00    0.00   6.86    0.0   1     0.0     0.0     .7   900.    4.  21.1 0.000 0.000    5.
   1.00   0.000    0.0   0.00    0.00   6.86    0.0   1     0.0     0.0     .7   900.    4.  21.1 0.000 0.000    5.
   2.00   0.000    0.0   0.00    0.00   6.86    0.0   1     0.0     0.0     .7   900.    4.  21.1 0.000 0.000    5.
   3.00   0.000    0.0   0.00    0.00   6.86    0.0   1     0.0     0.0     .7   900.    4.  21.1 0.000 0.000    5.
   4.04    .001    4.7   6.89    1.73    .52     .5   1      .8    15.7   32.4  1263.  135.  10.7  .346  .562   61.
   5.04    .003    9.6   7.19    2.27    .54    1.2   1     1.8    33.5   48.1  1550.  163.   7.2  .575  .797   71.
   6.04    .006   14.5   7.19    2.32    .59    1.6   1     3.0    50.9   65.6  1843.  187.   5.8  .731  .884   78.
   7.08    .011   17.4   4.25    3.91    .55    2.2   2     3.8    37.5   50.9  1608.  166.   6.9  .606  .820   72.
   8.08    .016   19.8   3.52    5.06    .51    2.7   2     4.6    36.3   46.9  1621.  152.   8.2  .684  .665   67.
   9.08    .022   21.8   2.93    6.09    .51    3.1   2     5.2    34.3   43.2  1627.  139.   9.6  .751  .891   62.
  10.08    .028   24.0   3.23    5.58    .52    3.5   2     6.0    41.3   51.5  1742.  155.   8.2  .772  .896   68.
  11.08    .035   25.8   2.64    5.74    .55    3.8   2     6.7    37.7   50.4  1661.  165.   7.0  .594  .811   72.
  12.08    .042   27.1   1.91    8.24    .52    4.2         7.3    30.8   39.4  1516.  137.  10.0  .659  .852   62.
  13.08    .050   28.0   1.32   10.29    .55    4.6   3     7.7    24.5   30.5  1430.  112.  12.9  .722  .881   53.
  14.08    .058   29.0   1.47    9.79    .53    5.0   3     8.1    27.5   34.2  1485.  121.  11.9  .720  .881   56.
  15.08    .066   30.0   1.47    9.84    .53    5.3   3     8.6    28.6   35.4  1512.  123.  11.6  .731  .885   57.
  16.07    .074   30.7   1.03   11.75    .56    5.6   3     8.9    23.3   26.6  1441.  104.  13.8  .785  .898   50.
  17.08    .083   31.5   1.17   11.13    .55    6.0   3     9.3    26.1   31.9  1490.  113.  12.3  .779  .897   53.
  18.07    .092   32.2   1.03   11.80    .56    6.3   3     9.7    24.8   30.3  1483.  107.  13.5  .800  .901   51.
  19.07    .101   32.9   1.03   11.82    .55    6.5   3    10.1    25.5   31.1  1502.  109.  13.3  .807  .901   52.
  20.07    .110   33.5    .88   12.61    .56    6.8   3    10.4    23.8   29.0  1486.  103.  14.0  .831  .903   49.
  21.07    .119   34.1    .88   12.62    .56    7.1   3    10.7    24.3   29.7  1502.  104.  13.8  .837  .903   50.
  22.07    .129   34.6    .73   13.50    .58    7.3   3    11.0    22.5   27.5  1483.   97.  14.6  .860  .904   48.
  23.07    .139   34.9    .44   15.15    .63    7.6   3    11.2    18.1   22.5  1430.   82.  15.7  .899  .899   42.
  24.09    .148   35.1    .29   16.20    .68    7.9   3    11.3    15.9   19.6  1417.   73.  16.5  .913  .913   39.
  25.10    .158   35.7    .88   12.62    .55    8.1   3    11.6    25.9   31.6  1546.  107.  13.5  .851  .904   51.
  26.11    .168   35.9    .29   16.25    .67    8.3   3    11.7    16.5   20.2  1445.   74.  16.4  .916  .916   39.
  27.09    .178   35.8   -.15   20.24    .95    8.6   3    11.7     9.2   11.5  1388.   43.  18.9  .950  .950   23.
  28.09    .188   35.3   -.73   46.92  11.82    9.0   3    11.4     -.3     .4   933.    2.  21.2 1.394  .717    3.
  29.08    .198   34.9   -.59   27.55   2.52    9.3   3    11.2     1.8    3.1  1326.   12.  21.5  .970  .970   16.
  30.07    .207   34.5   -.59   27.58   2.61    9.6   3    10.9     1.7    3.0  1310.   12.  21.6  .970  .970   16.
  31.15    .218   34.6    .15   17.26    .75    9.8   3    11.0    13.3   16.4  1381.   62.  17.3  .923  .923   35.
  32.16    .227   34.8    .29   16.19    .69    9.9   3    11.1    15.7   19.4  1407.   72.  16.5  .911  .911   38.
  33.16    .237   35.1    .44   15.15    .63   10.1   3    11.3    14.3   22.7  1437.   83.  15.7  .900  .900   42.
  34.16    .247   35.7    .88   12.62    .55   10.2   3    11.6    25.9   31.6  1546.  107.  13.5  .851  .904   51.
  35.16    .257   36.1    .59   14.29    .59   10.3   3    11.9    21.5   26.6  1493.   94.  14.9  .891  .897   46.
  36.13    .267   36.2    .15   17.34    .73   10.4   3    11.9    14.4   17.6  1440.   64.  17.1  .926  .926   36.
  37.13    .277   36.5    .44   15.22    .62   10.5   3    12.1    19.4   23.9  1486.   84.  15.6  .905  .905   43.
  38.15    .287   36.7    .29   16.29    .67   10.7   3    12.2    17.1   20.9  1473.   74.  16.4  .919  .919   39.
  39.16    .297   36.9    .29   16.30    .66   10.8   3    12.3    17.2   21.0  1479.   75.  16.3  .919  .919   39.
  40.14    .307   37.0    .15   17.37    .72   10.9   3    12.4    14.0   16.3  1469.   65.  17.1  .923  .928   36.
  41.14    .318   37.0   0.00   18.70    .81   11.1   3    12.4    12.4   15.2  1448.   55.  17.9  .942  .942   32.
  42.14    .328   37.0   0.00   18.70    .81   11.2   3    12.4    12.4   15.2  1448.   55.  17.9  .942  .942   32.
  43.14    .339   37.0   0.00   18.70    .81   11.4   3    12.4    12.4   15.2  1448.   55.  17.9  .942  .942   32.
  44.14    .349   37.0   0.00   18.70    .81   11.5   3    12.4    12.4   15.2  1448.   55.  17.9  .942  .942   32.
  45.14    .359   37.0   0.00   18.70    .81   11.6   3    12.4    12.4   15.2  1448.   55.  17.9  .942  .942   32.
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10/01/76                                  VEHICLE PERFORMANCE SIMULATION                                      PAG
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                                   DRIVING SCHEDULE ( HDC002 )         USING ROUTE ( LEVEL  )
                                   ----------------                    -----------

                                   INST          CUM
  SEC.     MILES     MPH      ACC      MPG    BSFC   MPG  GEAR     RDLD      HPW      HPE    RPM   TURQ     VAC       SR     ETA PCT.WOT
-------------------------------------------------------------------------------------------------------------------------------------------

  46.11     .369    37.1      .15    17.37     .72  11.7    3      12.5     15.0     18.3  1473.    65.    17.1     .928    .928     36.
  47.12     .379    37.3      .29    16.31     .66  11.8    3      12.6     17.5     21.4  1493.    75.    16.3     .921    .921     40.
  48.13     .390    37.8      .73    13.44     .56  11.9    3      12.9     25.4     31.2  1572.   104.    13.9     .886    .900     50.
  49.13     .400    38.6     1.17    11.11     .52  11.8    3      13.4     33.9     41.1  1665.   128.    11.0     .844    .904     58.
  50.13     .411    39.3     1.03    11.73     .53  11.8    3      13.9     32.3     39.1  1677.   122.    11.7     .864    .904     56.
  51.13     .422    40.0     1.03    11.70     .53  11.8    3      14.3     33.1     40.1  1696.   124.    11.5     .869    .904     57.
  52.13     .433    40.7     1.03    11.67     .52  11.8    3      14.8     33.9     41.0  1715.   126.    11.3     .874    .903     57.
  53.12     .445    41.4     1.03    11.64     .52  11.8    3      15.3     34.7     42.0  1734.   127.    11.2     .880    .903     58.
  54.12     .456    42.2     1.17    10.97     .51  11.8    3      15.9     38.3     46.3  1765.   136.    10.2     .871    .903     61.
  55.12     .468    42.9     1.03    11.52     .52  11.8    3      16.4     36.5     44.4  1777.   131.    10.8     .890    .898     59.
  56.12     .480    43.5      .88    12.24     .53  11.8    3      16.9     34.3     41.7  1778.   123.    11.7     .901    .901     56.
  57.13     .492    44.0      .73    13.11     .54  11.9    3      17.3     31.6     38.5  1780.   114.    12.7     .911    .911     53.
  58.13     .505    44.3      .44    15.01     .58  11.9    3      17.5     26.3     31.7  1762.    94.    14.7     .927    .927     47.
  59.14     .517    44.5      .29    16.01     .61  12.0    3      17.6     23.5     28.1  1752.    84.    15.5     .936    .936     43.
  60.14     .530    44.8      .44    14.97     .57  12.0    3      17.9     26.8     32.2  1760.    95.    14.7     .927    .927     47.
  61.12     .542    44.9      .15    16.98     .65  12.1    3      18.0     21.0     25.1  1753.    75.    16.2     .944    .944     40.
  62.09     .554    45.0      .15    16.97     .65  12.2    3      18.0     21.1     25.2  1757.    75.    16.2     .944    .944     40.
  63.07     .566    45.1      .15    16.95     .65  12.3    3      18.1     21.2     25.3  1761.    75.    16.2     .944    .944     40.
  64.07     .579    45.4      .44    14.95     .57  12.3    3      18.4     27.4     32.8  1802.    96.    14.6     .928    .928     47.
  65.07     .591    45.7      .44    14.94     .57  12.4    3      18.6     27.7     33.1  1813.    96.    14.5     .929    .929     47.
  66.07     .604    46.0      .44    14.92     .57  12.4    3      18.9     28.0     33.4  1823.    96.    14.5     .930    .930     47.
  67.07     .617    46.3      .44    14.90     .57  12.4    3      19.1     28.4     33.6  1834.    97.    14.4     .930    .930     47.
  68.08     .630    46.5      .29    15.95     .60  12.5    3      19.3     25.4     30.2  1822.    87.    15.2     .941    .941     44.
  69.08     .643    46.8      .44    14.87     .57  12.5    3      19.5     28.9     34.3  1851.    97.    14.4     .932    .932     48.
  70.06     .656    46.9      .15    16.74     .64  12.6    3      19.6     22.8     27.1  1828.    78.    15.9     .946    .946     41.
  71.04     .668    47.0      .15    16.73     .64  12.7    3      19.7     22.9     27.2  1831.    78.    15.9     .946    .946     41.
  72.02     .681    47.1      .15    16.72     .64  12.7    3      19.8     23.0     27.3  1835.    78.    15.9     .946    .946     41.
  72.99     .694    47.2      .15    16.71     .64  12.8    3      19.9     23.1     27.5  1839.    78.    15.9     .946    .946     41.
  73.97     .707    47.3      .15    16.70     .63  12.8    3      19.9     23.2     27.6  1842.    79.    15.9     .946    .946     41.
  74.95     .720    47.2     -.15    19.18     .76  12.9    3      19.9     16.6     20.0  1811.    58.    17.5     .961    .961     34.
  75.93     .733    47.1     -.15    19.20     .76  13.0    3      19.8     16.6     19.9  1807.    58.    17.5     .961    .961     34.
  76.90     .745    47.0     -.15    19.22     .76  13.1    3      19.7     16.5     19.8  1803.    58.    17.5     .961    .961     34.
  77.88     .758    46.9     -.15    19.24     .76  13.1    3      19.6     16.4     19.7  1799.    58.    17.5     .961    .961     34.
  78.86     .771    46.9     0.00    17.92     .69  13.2    3      19.6     19.6     23.4  1813.    68.    16.7     .953    .953     38.
  79.88     .784    46.9     0.00    17.92     .69  13.2    3      19.6     19.6     23.4  1813.    68.    16.7     .953    .953     38.
  80.86     .797    47.0      .15    16.73     .64  13.3    3      19.7     22.9     27.2  1831.    78.    15.9     .946    .946     41.
  81.84     .810    47.1      .15    16.72     .64  13.3    3      19.8     23.0     27.3  1835.    78.    15.9     .946    .946     41.
  82.84     .823    47.1     0.00    17.89     .69  13.4    3      19.8     19.8     23.6  1820.    68.    16.7     .954    .954     38.
  83.82     .836    47.2      .15    16.71     .64  13.4    3      19.9     23.1     27.5  1839.    78.    15.9     .946    .946     41.
  84.79     .848    47.1     -.15    19.20     .76  13.5    3      19.8     16.6     19.9  1807.    58.    17.5     .961    .961     34.
  85.77     .861    47.0     -.15    19.22     .76  13.5    3      19.7     16.5     19.8  1803.    58.    17.5     .961    .961     34.
  86.75     .874    46.9     -.15    19.24     .76  13.6    3      19.6     16.4     19.7  1799.    58.    17.5     .961    .961     34.
  87.74     .887    46.5     -.59    24.05    1.31  13.7    3      19.3      6.8      9.1  1766.    27.    20.3     .970    .970     23.
  88.75     .900    46.3     -.29    20.69     .87  13.8    3      19.1     13.0     15.8  1765.    47.    18.3     .967    .967     30.
  89.73     .912    46.2     -.15    19.36     .77  13.8    3      19.0     15.9     19.1  1773.    57.    17.6     .960    .960     34.
  90.71     .925    46.3      .15    16.81     .64  13.8    3      19.1     22.3     26.5  1905.    77.    16.0     .945    .945     41.
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10/01/76                                    VEHICLE PERFORMANCE SIMULATION                                    PAC
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                                  DRIVING SCHEDULE ( HDCC02 )          USING ROUTE ( LEVEL   )
                                  ----------------                     -----------
                                   INST         CUM
  SEC.    MILES    MPH     ACC      MPG   BSFC  MPG GEAR      RDLD      HPW      HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
---------------------------------------------------------------------------------------------------------------------------

  91.72    .938   46.5     .29    15.85    .60 13.9    3      19.3     25.4     30.2 1822.   87.   15.2   .941   .941    44.
  92.72    .951   46.9     .59    13.83    .54 13.9    3      19.6     32.2     38.4 1869.  108.   13.3   .925   .925    51.
  93.73    .964   47.1     .29    15.79    .60 13.9    3      19.8     26.0     30.6 1844.   88.   15.1   .941   .941    44.
  94.73    .977   47.4     .44    14.77    .56 13.9    3      20.0     29.5     35.2 1872.   99.   14.2   .933   .933    48.
  95.73    .990   47.7     .44    14.76    .56 13.9    3      20.3     29.8     35.5 1883.   99.   14.2   .934   .934    48.
  96.73   1.004   48.0     .44    14.78    .56 13.9    3      20.6     30.1     35.7 1893.   99.   14.1   .934   .934    48.
  97.74   1.017   48.2     .29    15.67    .59 13.9    3      20.7     27.1     32.1 1885.   89.   15.0   .942   .942    45.
  98.74   1.031   48.5     .44    14.70    .56 14.0    3      21.0     30.7     36.5 1911.  100.   14.0   .936   .936    49.
  99.74   1.044   48.8     .44    14.72    .56 14.0    3      21.3     31.0     36.7 1921.  100.   14.0   .936   .936    49.
 100.74   1.058   49.1     .44    14.70    .56 14.0    3      21.5     31.4     37.0 1932.  101.   14.0   .937   .937    49.
 101.72   1.071   49.2     .15    16.48    .62 14.0    3      21.6     25.0     29.6 1912.   81.   15.6   .948   .948    42.
 102.69   1.084   49.1    -.15    18.95    .74 14.0    3      21.5     18.2     21.8 1862.   61.   17.3   .962   .962    35.
 103.69   1.098   49.1    0.00    17.62    .67 14.1    3      21.5     21.5     25.6 1893.   71.   16.4   .956   .956    39.
 104.67   1.111   49.0    -.15    18.87    .74 14.1    3      21.4     18.1     21.7 1878.   61.   17.3   .962   .962    35.
 105.67   1.125   49.0    0.00    17.63    .67 14.2    3      21.4     21.4     25.5 1890.   71.   16.4   .956   .956    39.
 106.65   1.138   49.1     .15    16.49    .62 14.2    3      21.5     24.9     29.5 1906.   81.   15.6   .948   .948    42.
 107.63   1.152   49.2     .15    16.48    .62 14.2    3      21.6     25.0     29.6 1912.   81.   15.6   .948   .948    42.
 108.61   1.165   49.3     .15    16.47    .62 14.2    3      21.7     25.1     29.7 1916.   81.   15.6   .948   .948    42.
 109.58   1.178   49.4     .15    16.46    .62 14.3    3      21.8     25.2     29.8 1919.   82.   15.5   .949   .949    42.
 110.56   1.192   49.5     .15    16.45    .62 14.3    3      21.9     25.3     29.9 1923.   82.   15.5   .949   .949    42.
 111.56   1.206   49.5    0.00    17.56    .67 14.3    3      21.9     21.9     26.0 1908.   72.   16.4   .956   .956    39.
 112.56   1.219   49.5    0.00    17.56    .67 14.3    3      21.9     21.9     26.0 1908.   72.   16.4   .956   .956    39.
 113.54   1.233   49.4    -.15    18.80    .74 14.4    3      21.8     18.4     22.0 1893.   61.   17.2   .962   .962    35.
 114.54   1.246   49.1    -.44    21.49    .97 14.4    3      21.5     11.7     14.5 1865.   41.   18.9   .970   .970    29.
 115.55   1.260   48.9    -.29    20.18    .83 14.5    3      21.4     14.9     18.0 1862.   51.   18.0   .968   .968    32.
 116.55   1.274   48.6    -.44    21.63    .98 14.5    3      21.1     11.4     14.1 1846.   40.   18.9   .970   .970    28.
 117.56   1.287   48.4    -.29    20.27    .84 14.6    3      20.9     14.5     17.6 1844.   50.   18.1   .967   .967    32.
 118.56   1.301   48.1    -.44    21.77    .99 14.6    3      20.6     11.0     13.7 1827.   39.   19.0   .970   .970    28.
 119.56   1.314   47.7    -.59    23.53   1.26 14.7    3      20.3      7.5      9.9 1812.   29.   20.0   .970   .970    24.
 120.56   1.327   47.4    -.44    21.98   1.01 14.7    3      20.0     10.5     13.2 1801.   38.   19.1   .970   .970    28.
 121.53   1.340   47.3    -.15    19.17    .76 14.7    3      19.9     16.7     20.1 1814.   58.   17.5   .961   .961    34.
 122.55   1.353   47.5     .29    15.75    .60 14.8    3      20.1     26.4     31.3 1859.   88.   15.1   .942   .942    45.
 123.55   1.367   47.8     .44    14.79    .56 14.8    3      20.4     29.9     35.5 1886.   99.   14.2   .934   .934    49.
 124.52   1.380   47.9     .15    16.63    .63 14.8    3      20.5     23.7     28.2 1864.   79.   15.3   .947   .947    42.
 125.50   1.393   48.0     .15    16.62    .63 14.8    3      20.6     23.8     28.3 1868.   80.   15.8   .947   .947    42.
 126.48   1.406   47.9    -.15    19.26    .75 14.8    3      20.5     17.2     20.6 1837.   59.   17.4   .961   .961    35.
 127.48   1.419   47.9    0.00    17.78    .68 14.8    3      20.5     20.5     24.4 1849.   69.   16.6   .955   .955    38.
 128.48   1.432   47.9    0.00    17.78    .68 14.9    3      20.5     20.5     24.4 1849.   69.   16.6   .955   .955    38.
 129.46   1.445   48.0     .15    16.62    .63 14.9    3      20.6     23.8     28.3 1868.   80.   15.8   .947   .947    42.
 130.46   1.458   46.0   -2.93    95.17  99.99 15.0    3      24.4    -11.9    -10.1 1499.  -35.   24.6  1.131   .884     0.
 131.61   1.473   48.0    2.93     5.09    .56 14.7    3      20.6     84.5    101.0 2225.  238.    2.4   .795   .900    95.
 132.59   1.487   47.9    -.15    19.06    .75 14.8    3      20.5     17.2     20.6 1837.   59.   17.4   .961   .961    35.
 133.59   1.500   47.3    -.88    26.21   3.61 14.8    3      19.9      1.0      2.9 1797.    8.   22.2   .970   .970    17.
 134.59   1.513   46.0   -1.91    95.17  99.99 14.9    3      21.6    -12.2    -10.1 1499.  -35.   24.6  1.131   .884     0.
 135.59   1.525   43.3   -3.96    90.19  99.99 15.0    3      24.8    -10.0     -8.3 1367.  -32.   24.2  1.168   .856     0.
 136.59   1.537   41.2   -3.08    36.23  99.99 15.1    3      20.8     -9.0     -7.1 1269.  -29.   23.9  1.196   .836     0.
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10/01/76                         VEHICLE PERFORMANCE SIMULATION                          PAG

                   DRIVING SCHEDULE ( HDC002 )      USING ROUTE ( LEVEL  )

                                 INST          CUM
  SEC.    MILES    MPH    ACC    MPG    BSFC   MPG GEAR    RDLD    HPW    HPE   RPM  TORQ   VAC     SR    ETA PCT.WOT
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 137.59   1.548   39.5  -2.49   83.03  99.99  15.2   3     10.0   -7.8   -6.2  1191.  -27.  23.6  1.222  .818     0.
 138.55   1.559   39.2   -.44   24.40   1.27  15.3   3     13.8    6.0    7.8  1489.   28.  20.5   .970  .970    23.
 139.56   1.570   39.0   -.29   22.08   1.02  15.3   3     13.7    8.5   10.7  1492.   38.  19.5   .964  .964    26.
 140.56   1.580   39.0   0.00   18.73    .77  15.3   3     13.7   13.7   16.6  1522.   57.  17.7   .944  .944    33.
 141.54   1.591   39.1    .15   17.43    .70  15.3   3     13.7   16.4   19.9  1543.   68.  16.9   .934  .934    37.
 142.54   1.602   39.5    .59   14.33    .57  15.3   3     14.0   24.6   30.1  1606.   98.  14.6   .905  .905    48.
 143.54   1.613   40.1    .88   12.45    .54  15.3   3     14.4   30.4   37.1  1668.  117.  12.3   .886  .901    54.
 144.54   1.624   41.0   1.32   10.41    .51  15.2   3     15.0   39.6   47.6  1780.  141.   9.7   .849  .904    63.
 145.53   1.636   42.0   1.47    9.76    .50  15.2   3     15.7   43.8   52.7  1834.  151.   8.8   .844  .904    66.
 146.54   1.647   43.1   1.61    8.80    .52  15.1   3     16.6   48.1   57.8  1888.  161.   8.1   .841  .903    69.
 147.54   1.660   43.7    .88   12.25    .53  15.1   3     17.0   34.5   41.6  1785.  123.  11.7   .902  .902    56.
 148.53   1.672   44.1    .59   14.07    .55  15.1   3     17.3   29.1   35.0  1767.  104.  13.8   .920  .920    50.
 149.54   1.684   44.3    .29   16.02    .61  15.1   3     17.5   23.3   27.9  1745.   84.  15.5   .936  .936    43.
 150.52   1.696   44.4    .15   17.04    .65  15.1   3     17.6   20.6   24.6  1735.   75.  16.3   .943  .943    40.
 151.53   1.709   44.6    .29   16.00    .61  15.1   3     17.7   23.6   28.2  1755.   84.  15.5   .936  .936    43.
 152.51   1.721   44.7    .15   17.00    .65  15.1   3     17.8   20.8   24.9  1746.   75.  16.2   .944  .944    40.
 153.52   1.733   44.9    .29   16.08    .61  15.1   3     18.0   23.9   28.5  1766.   85.  15.5   .937  .937    43.
 154.52   1.746   45.2    .44   14.97    .57  15.1   3     18.2   27.2   32.5  1795.   95.  14.6   .928  .928    47.
 155.53   1.759   45.7    .73   13.02    .53  15.1   3     18.6   33.8   40.5  1838.  116.  12.5   .916  .916    54.
 156.54   1.771   45.9    .29   15.90    .60  15.1   3     18.8   24.8   29.5  1800.   86.  15.3   .940  .940    44.
 157.53   1.784   46.3    .59   13.88    .55  15.1   3     19.1   31.5   37.7  1847.  107.  13.4   .924  .924    51.
 158.54   1.797   46.8    .73   12.96    .53  15.1   3     19.5   35.0   41.9  1876.  117.  12.3   .919  .919    54.
 159.51   1.810   46.9    .15   16.74    .64  15.1   3     19.6   22.8   27.1  1828.   78.  15.9   .946  .946    41.
 160.49   1.823   47.0    .15   16.73    .64  15.1   3     19.7   22.9   27.2  1831.   78.  15.9   .946  .946    41.
 161.47   1.835   47.1    .15   16.72    .64  15.1   3     19.8   23.0   27.3  1835.   78.  15.9   .946  .946    41.
 162.48   1.849   47.6    .73   12.90    .53  15.1   3     20.2   36.0   43.0  1905.  119.  12.2   .921  .921    55.
 163.48   1.862   47.9    .44   14.74    .56  15.1   3     20.5   30.0   35.6  1890.  100.  14.1   .934  .934    48.
 164.45   1.875   48.0    .15   16.62    .63  15.1   3     20.6   23.8   28.3  1868.   80.  15.8   .947  .947    42.
 165.45   1.888   48.0   0.00   17.77    .68  15.1   3     20.6   20.5   24.5  1853.   69.  16.5   .955  .955    38.
 166.43   1.901   47.9   -.15   19.06    .75  15.1   3     20.5   17.2   20.6  1837.   59.  17.4   .961  .961    35.
 167.41   1.914   47.8   -.15   19.08    .75  15.2   3     20.4   17.1   20.5  1833.   59.  17.4   .961  .961    35.
 168.41   1.928   47.3   -.73   25.76   1.78  15.2   3     19.9    4.2    6.4  1797.   19.  21.2   .970  .970    21.
 169.41   1.941   46.7   -.88   28.49   3.97  15.2   3     19.4     .7    2.5  1774.    8.  22.2   .970  .970    17.
 170.42   1.954   46.2   -.73   26.37   1.90  15.3   3     19.0    3.7    5.7  1755.   17.  21.4   .970  .970    20.
 171.42   1.966   45.9   -.44   22.47   1.04  15.3   3     18.8    9.6   12.1  1744.   36.  19.4   .970  .970    27.
 172.43   1.979   45.7   -.29   20.83    .88  15.3   3     18.6   12.6   15.4  1743.   46.  18.4   .967  .967    30.
 173.44   1.992   45.5   -.29   20.87    .88  15.4   3     18.4   12.4   15.2  1735.   46.  18.5   .966  .966    30.
 174.42   2.004   45.4   -.15   19.50    .78  15.4   3     18.4   15.3   18.4  1743.   55.  17.7   .960  .960    33.
 175.40   2.017   45.3   -.15   19.52    .78  15.4   3     18.3   15.2   18.3  1740.   55.  17.7   .960  .960    33.
 176.40   2.029   45.0   -.44   22.79   1.07  15.4   3     18.0    9.0   11.4  1709.   35.  19.6   .970  .970    26.
 177.39   2.042   44.0  -1.47   79.00  99.99  15.5   3     18.8  -10.6   -8.4  1400.  -32.  24.1  1.158  .864     3.
 178.39   2.054   43.1  -1.32   55.17  99.99  15.6   3     17.6   -8.1   -6.2  1357.  -24.  23.7  1.170  .854     3.
 179.39   2.066   42.2  -1.32   57.12  99.99  15.7   3     17.1   -8.2   -6.2  1315.  -25.  23.7  1.183  .846     2.
 180.39   2.077   41.5  -1.03   44.37  99.99  15.7   3     15.9   -3.6   -2.1  1263.   -8.  22.7  1.192  .839     8.
 181.39   2.089   41.5   0.00   18.66    .74  15.7   3     15.4   15.4   18.6  1615.   61.  17.4   .947  .947    32.
 182.41   2.100   42.1    .88   12.29    .53  15.7   3     15.8   32.7   39.9  1730.  121.  11.8   .897  .897    55.
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10/01/76 VEHICLE PERFORMANCE SIMULATION PAG

DRIVING SCHEDULE (HDC002) USING ROUTE (LEVEL)

SEC.	MILES	MPH	ACC	INST MPG	BSFC	CUM MPG	GEAR	RDLD	HPW	HPE	RPM	TORQ	VAC	SR	ETA	PCT.WOT
183.42	2.112	42.9	1.17	10.94	.51	15.7	3	16.4	39.2	47.4	1904.	138.	10.1	.877	.903	61.
184.42	2.124	43.5	.88	12.24	.53	15.6	3	16.9	34.3	41.7	1778.	123.	11.7	.901	.901	56.
185.41	2.136	43.9	.59	14.08	.55	15.6	3	17.2	28.9	34.8	1760.	104.	13.8	.919	.919	50.
186.41	2.149	43.6	-.44	23.35	1.10	15.7	3	16.9	8.2	10.5	1656.	33.	19.8	.970	.970	25.
187.41	2.161	43.3	-.44	23.48	1.11	15.7	3	16.7	8.0	10.3	1645.	33.	19.9	.970	.970	25.
188.41	2.173	43.0	-.44	23.61	1.11	15.7	3	16.5	7.9	10.1	1633.	32.	19.9	.970	.970	25.
189.41	2.185	43.1	.15	17.19	.66	15.7	3	16.6	19.5	23.4	1666.	73.	16.4	.942	.942	39.
190.41	2.197	43.4	.44	15.09	.58	15.7	3	16.8	25.5	30.6	1729.	93.	14.9	.925	.925	46.
191.41	2.209	43.9	.73	13.12	.54	15.7	3	17.2	31.7	38.4	1776.	113.	12.7	.911	.911	53.
192.41	2.221	44.3	.59	14.06	.55	15.7	3	17.5	29.4	35.3	1774.	104.	13.7	.920	.920	50.
193.41	2.233	44.6	.44	14.99	.57	15.7	3	17.7	26.6	32.0	1773.	95.	14.7	.927	.927	47.
194.41	2.246	44.9	.44	14.98	.57	15.7	3	18.0	26.9	32.2	1784.	95.	14.7	.928	.928	47.
195.38	2.258	44.8	-.15	19.61	.79	15.7	3	17.9	14.8	17.9	1721.	55.	17.8	.959	.959	33.
196.38	2.270	44.4	-.59	25.13	1.41	15.7	3	17.6	5.6	7.7	1687.	24.	20.7	.970	.970	22.
197.38	2.283	43.9	-.73	27.68	2.22	15.8	3	17.2	2.6	4.4	1668.	14.	21.8	.970	.970	19.
198.39	2.295	43.4	-.73	27.97	2.30	15.8	3	16.8	2.4	4.2	1649.	13.	21.8	.970	.970	18.
199.40	2.307	43.2	-.29	21.47	.92	15.8	3	16.6	10.9	13.5	1649.	43.	18.8	.966	.966	29.
200.40	2.319	43.2	0.00	18.42	.72	15.8	3	16.6	16.0	20.0	1677.	63.	17.2	.949	.949	36.
201.38	2.331	43.1	-.15	19.91	.81	15.9	3	16.6	13.6	16.5	1657.	52.	18.0	.959	.959	32.
202.35	2.342	43.0	-.15	19.93	.81	15.9	3	16.5	13.5	16.4	1653.	52.	18.0	.958	.958	32.
203.35	2.354	43.0	0.00	18.45	.72	15.9	3	16.5	16.5	19.9	1670.	62.	17.2	.949	.949	35.
204.33	2.366	43.1	.15	17.19	.66	15.9	3	16.6	19.5	23.4	1666.	73.	16.4	.942	.942	39.
205.33	2.378	43.4	.44	15.09	.58	15.9	3	16.8	25.5	30.6	1729.	93.	14.9	.925	.925	46.
206.34	2.390	43.9	.73	13.12	.54	15.9	3	17.2	31.7	38.4	1776.	113.	12.7	.911	.911	53.
207.31	2.402	44.0	.15	17.08	.66	15.9	3	17.3	20.2	24.2	1720.	74.	16.3	.943	.943	40.
208.32	2.414	43.5	-.73	27.91	2.29	15.9	3	16.9	2.4	4.2	1652.	13.	21.8	.970	.970	19.
209.32	2.426	42.6	-1.32	67.31	99.99	16.0	3	17.4	-8.2	-6.2	1334.	-24.	23.7	1.177	.850	2.
210.32	2.438	41.5	-1.61	96.80	99.99	16.0	3	17.3	-9.4	-7.3	1263.	-30.	23.9	1.192	.839	0.
211.32	2.449	40.7	-1.17	56.95	99.99	16.1	3	15.7	-6.0	-4.2	1247.	-18.	23.2	1.203	.831	4.
212.32	2.461	40.0	-1.03	47.27	99.99	16.1	3	14.9	-3.8	-2.4	1216.	-10.	22.7	1.212	.825	7.
213.32	2.472	40.0	0.00	18.73	.76	16.1	3	14.3	14.3	17.4	1560.	59.	17.6	.945	.945	34.
214.32	2.483	40.3	.44	15.29	.59	16.1	3	14.5	22.6	27.4	1617.	89.	15.3	.918	.918	45.
215.32	2.494	41.0	1.03	11.66	.52	16.1	3	15.0	34.2	41.5	1724.	126.	11.3	.877	.903	58.
216.32	2.506	42.0	1.47	9.76	.50	16.1	3	15.7	43.8	52.7	1834.	151.	8.8	.844	.904	66.
217.32	2.517	42.7	1.03	11.54	.52	16.0	3	16.3	36.3	44.1	1772.	131.	10.8	.888	.899	59.
218.31	2.529	43.1	.59	14.12	.56	16.0	3	16.6	28.1	33.9	1733.	103.	13.9	.917	.917	49.
219.29	2.541	43.2	.15	17.18	.66	16.0	3	16.6	19.6	23.5	1690.	73.	16.4	.942	.942	39.
220.30	2.553	43.4	.29	16.09	.62	16.0	3	16.8	22.5	27.0	1713.	83.	15.7	.934	.934	43.
221.31	2.565	43.9	.73	13.12	.54	16.0	3	17.2	31.7	38.4	1776.	113.	12.7	.911	.911	53.
222.30	2.577	44.3	.59	14.06	.55	16.0	3	17.5	29.4	35.3	1774.	104.	13.7	.920	.920	50.
223.30	2.590	44.7	.59	14.02	.55	16.0	3	17.8	29.8	35.7	1788.	105.	13.7	.921	.921	50.
224.29	2.602	45.1	.59	13.99	.55	16.0	3	18.1	30.2	36.2	1803.	105.	13.6	.922	.922	50.
225.29	2.615	45.4	.44	14.95	.57	16.0	3	18.4	27.4	32.8	1802.	96.	14.6	.928	.928	47.
226.28	2.627	45.8	.59	13.93	.55	16.0	3	18.7	31.0	37.1	1829.	106.	13.5	.923	.923	51.
227.28	2.640	46.5	1.03	11.33	.51	15.9	3	19.3	41.0	49.6	1957.	137.	10.3	.903	.903	61.
228.28	2.653	46.9	.59	13.83	.54	15.9	3	19.6	32.2	38.4	1869.	108.	13.3	.925	.925	51.

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   10/C1/76                          VEHICLE PERFORMANCE SIMULATION                                              PAG
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                                 DRIVING SCHEDULE ( HDC002 )          USING ROUTE ( LEVEL   )
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                                   INST          CUM
  SEC.    MILES    MPH    ACC      MPG    BSFC   MPG GEAR    RDLD    HPW    HPE   RPM   TORQ   VAC     SR    ETA PCT.WOT
------------------------------------------------------------------------------------------------------------------------

 229.28   2.666   47.2    .44    14.80    .56  15.9   3      19.9   29.3   35.0 1865.    96.   14.2   .933  .933   48.
 230.29   2.679   47.4    .29    15.76    .60  15.9   3      20.0   26.3   31.2 1855.    88.   15.1   .942  .942   45.
 231.26   2.692   47.3   -.15    19.17    .76  15.9   3      19.9   16.7   20.1 1914.    58.   17.5   .961  .961   34.
 232.26   2.705   47.3   0.00    17.86    .69  15.9   3      19.9   19.9   23.8 1827.    68.   16.7   .954  .954   38.
 233.24   2.718   47.2   -.15    19.19    .76  15.9   3      19.9   16.6   20.0 1811.    58.   17.5   .961  .961   34.
 234.24   2.731   47.2   0.00    17.89    .69  16.0   3      19.9   19.9   23.7 1824.    66.   16.7   .954  .954   38.
 235.24   2.744   47.2   0.00    17.89    .69  16.0   3      19.9   19.9   23.7 1824.    68.   16.7   .954  .954   38.
 236.22   2.757   47.1   -.15    19.20    .76  16.0   3      19.8   16.6   19.9 1907.    58.   17.5   .961  .961   34.
 237.20   2.770   47.0   -.15    19.22    .76  16.0   3      19.7   16.5   19.8 1803.    58.   17.5   .961  .961   34.
 238.20   2.783   47.0   0.00    17.90    .69  16.0   3      19.7   19.7   23.5 1816.    68.   16.7   .954  .954   38.
 239.18   2.796   46.9   -.15    19.24    .76  16.0   3      19.6   16.4   19.7 1799.    58.   17.5   .961  .961   34.
 240.15   2.809   46.8   -.15    19.25    .76  16.0   3      19.5   16.3   19.6 1796.    57.   17.5   .960  .960   34.
 241.13   2.821   46.9    .15    16.74    .64  16.0   3      19.6   22.8   27.1 1828.    78.   15.9   .946  .946   41.
 242.11   2.834   47.0    .15    16.73    .64  16.0   3      19.7   22.9   27.2 1831.    78.   15.9   .946  .946   41.
 243.12   2.847   47.2    .29    15.78    .60  16.0   3      19.9   26.1   30.9 1848.    88.   15.1   .941  .941   44.
 244.12   2.860   47.5    .44    14.81    .56  16.0   3      20.1   29.6   35.1 1876.    98.   14.2   .933  .933   48.
 245.11   2.874   47.9    .59    13.74    .54  16.0   3      20.5   33.3   39.7 1905.   109.   13.1   .926  .926   52.
 246.09   2.887   48.0    .15    16.62    .63  16.0   3      20.6   23.8   28.3 1866.    80.   15.9   .947  .947   42.
 247.09   2.900   48.0   0.00    17.77    .68  16.0   3      20.6   20.5   24.5 1853.    69.   16.6   .955  .955   38.
 248.09   2.913   48.0   0.00    17.77    .68  16.0   3      20.6   20.5   24.5 1853.    69.   16.6   .955  .955   38.
 249.09   2.927   48.0   0.00    17.77    .68  16.0   3      20.6   20.5   24.5 1853.    69.   16.6   .955  .955   38.
 250.09   2.940   48.0   0.00    17.77    .68  16.0   3      20.6   20.5   24.5 1853.    69.   16.6   .955  .955   38.
 251.07   2.953   48.1    .15    16.61    .63  16.0   3      20.6   23.9   28.4 1872.    80.   15.7   .947  .947   42.
 252.05   2.966   48.2    .15    16.59    .63  16.0   3      20.7   24.0   26.5 1875.    80.   15.7   .947  .947   42.
 253.05   2.979   48.2   0.00    17.74    .68  16.1   3      20.7   20.7   24.7 1860.    70.   16.6   .955  .955   38.
 254.03   2.992   48.1   -.15    19.03    .75  16.1   3      20.6   17.4   20.8 1844.    59.   17.4   .961  .961   35.
 255.05   3.006   48.6    .73    12.82    .53  16.0   3      21.1   37.2   44.3 1941.   120.   12.1   .923  .923   55.
 256.05   3.020   48.9    .44    14.71    .56  16.0   3      21.4   31.1   36.8 1925.   100.   14.0   .936  .936   47.
 257.06   3.034   49.1    .29    15.58    .59  16.0   3      21.5   28.0   33.1 1919.    91.   14.8   .943  .943   45.
 258.06   3.047   49.1   0.00    17.62    .67  16.0   3      21.5   21.5   25.6 1893.    71.   16.4   .956  .956   39.
 259.06   3.061   49.1   0.00    17.62    .67  16.0   3      21.5   21.5   25.6 1893.    71.   16.4   .956  .956   39.
 260.06   3.075   49.1   0.00    17.62    .67  16.1   3      21.5   21.5   25.6 1893.    71.   16.4   .956  .956   39.
 261.06   3.088   49.1   0.00    17.62    .67  16.1   3      21.5   21.5   25.6 1893.    71.   16.4   .956  .956   39.
 262.04   3.101   49.0   -.15    18.87    .74  16.1   3      21.4   18.1   21.7 1878.    61.   17.3   .962  .962   35.
 263.02   3.115   48.9   -.15    18.82    .74  16.1   3      21.4   18.0   21.6 1874.    60.   17.3   .962  .962   35.
 264.02   3.128   48.2  -1.03    35.38  99.99  16.1   3      20.9   -1.7    -.1 1899.    -0.   22.9  1.111  .900   13.
 265.01   3.141   47.7   -.73    25.5[illegible]   1.74  16.1   3      20.3    4.5    6.6 1812.    19.   21.1   .970  .970   21.
 266.02   3.155   47.5   -.29    20.44    .85  16.2   3      20.1   13.9   16.6 1810.    49.   16.2   .967  .967   31.
 267.02   3.168   47.2   -.44    22.04   1.01  16.2   3      19.9   10.4   13.0 1793.    38.   19.2   .970  .970   27.
 268.02   3.181   46.7   -.73    26.10   1.84  16.2   3      19.4    3.9    6.0 1774.    18.   21.3   .970  .970   20.
 269.03   3.194   46.2   -.73    26.37   1.90  16.2   3      19.0    3.7    5.7 1755.    17.   21.4   .970  .970   20.
 270.04   3.207   46.0   -.29    20.75    .88  16.2   3      18.9   12.8   15.6 1754.    47.   18.4   .967  .967   30.
 271.05   3.220   45.8   -.29    20.80    .88  16.3   3      18.7   12.6   15.4 1746.    46.   18.4   .967  .967   30.
 272.06   3.233   45.6   -.29    20.85    .88  16.3   3      18.5   12.5   15.3 1739.    46.   18.4   .966  .966   30.
 273.07   3.245   45.4   -.29    20.90    .89  16.3   3      18.4   12.4   15.1 1731.    46.   18.5   .966  .966   30.
 274.08   3.258   45.2   -.29    20.95    .89  16.3   3      18.2   12.2   15.0 1724.    46.   18.5   .966  .966   30.
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   10/01/76                         VEHICLE PERFORMANCE SIMULATION                                          PAG

                              DRIVING SCHEDULE ( HDC.02 )        USING ROUTE ( LEVEL  )

                                 INST          CUM
   SEC.    MILES    MPH    ACC    MPG    BSFC   MPG GEAR   ROLD    HPW    HPE    RPM  TORQ   VAC     SR    ETA PCT.WOT
-------------------------------------------------------------------------------------------------------------------------
  275.10   3.271   45.0   -.29   20.99    .89  16.3   3    18.0   12.1   14.6  1716.   45.   18.5   .966   .966   30.
  276.10   3.283   44.7   -.44   22.93   1.07  16.3   3    17.8    8.9   11.2  1698.   35.   19.6   .970   .970   26.
  277.11   3.296   44.5   -.29   21.12    .96  16.3   3    17.6   11.8   14.4  1696.   45.   18.6   .966   .966   29.
  278.11   3.308   44.2   -.44   23.10   1.69  16.4   3    17.4    8.6   10.9  1679.   34.   19.7   .970   .970   26.
  279.10   3.320   43.5  -1.03   40.95  99.99  16.4   3    17.3   -3.1   -1.6  1376.   -6.   22.7  1.165   .858   10.
  280.10   3.332   42.9  -1.03   42.09  99.99  16.4   3    16.8   -3.3   -1.6  1343.   -7.   22.7  1.174   .852    9.
  281.10   3.344   42.0  -1.17   53.22  99.99  16.5   3    16.6   -5.8   -4.0  1306.  -16.   23.2  1.185   .844    5.
  282.10   3.355   40.1  -2.79   84.14  99.99  16.5   3    19.2   -8.4   -6.6  1220.  -28.   23.3  1.211   .826    0.
  283.10   3.366   38.6  -2.20   81.55  99.99  16.6   3    16.7   -6.6   -4.9  1130.  -23.   23.2  1.259   .794    0.
  284.11   3.377   37.5  -1.61   79.72  99.99  16.6   3    14.6   -5.4   -3.7  1060.  -18.   22.7  1.304   .767    0.
  285.11   3.387   35.8  -2.49   76.75  99.99  16.6   3    15.5   -3.3   -2.1   960.  -11.   22.0  1.374   .728    0.
  286.11   3.397   34.7  -1.61   74.79  99.99  16.7   3    12.9   -2.7   -1.3   900.   -7.   21.6  1.421   .704    0.
  287.11   3.406   34.0  -1.03   73.29  99.99  16.7   3    11.3   -2.6   -1.3   900.   -7.   21.5  1.392   .718    0.
  288.10   3.416   33.3  -1.03   71.78  99.99  16.7   3    11.0   -2.6   -1.3   900.   -7.   21.6  1.364   .733    0.
  289.10   3.425   32.5  -1.17   70.05  99.99  16.8   3    10.8   -2.5   -1.3   900.   -7.   21.6  1.331   .751    0.
  290.11   3.434   31.7  -1.17   68.33  99.99  16.8   3    10.4   -2.4   -1.3   900.   -7.   21.6  1.298   .770    0.
  291.11   3.443   30.6  -1.61   65.96  99.99  16.8   3    10.7   -2.3   -1.3   900.   -7.   21.6  1.253   .798    0.
  292.11   3.451   29.6  -1.47   63.60  99.99  16.9   3     9.9   -2.3   -1.3   900.   -7.   21.6  1.212   .825    0.
  293.11   3.459   28.8  -1.17   62.08  99.99  16.9   3     9.5   -2.2   -1.3   900.   -7.   21.6  1.179   .848    0.
  294.10   3.467   28.4   -.50   29.12   5.36  16.9   3     7.9     .2    1.1  1079.    5.   21.5   .973   .970   10.
  295.21   3.476   28.6    .29   15.59    .77  16.9   3     7.9   11.7   14.6  1205.   64.   17.2   .875   .903   35.
  296.25   3.484   29.5   1.32   10.40    .54  16.9   3     8.4   26.1   32.2  1469.  115.   12.3   .740   .887   54.
  297.27   3.493   31.4   2.79    6.07    .52  16.8   2     9.3   49.2   51.1  1977.  162.    8.2   .890   .898   69.
  298.27   3.502   33.4   2.93    5.51    .55  16.7   2    10.3   54.9   68.2  2081.  172.    7.5   .899   .899   73.
  299.27   3.511   35.6   3.23    4.76    .58  16.6   2    11.6   63.9   79.0  2210.  188.    6.2   .902   .902   78.
  300.25   3.521   37.5   2.79    5.10    .61  16.5   3    12.7   60.3   74.0  1927.  202.    4.7   .717   .880   82.
  301.25   3.532   39.1   2.35    6.15    .56  16.4   3    13.7   55.5   67.2  1901.  186.    6.0   .758   .893   77.
  302.25   3.543   40.7   1.61    9.27    .51  16.4   3    14.5   43.0   52.9  1811.  153.    8.5   .818   .902   67.
  303.25   3.554   41.1   1.32   10.41    .51  16.4   3    15.1   39.8   48.0  1782.  141.    9.7   .850   .904   63.
  304.25   3.566   41.8   1.03   11.61    .52  16.3   3    15.6   35.2   42.6  1745.  128.   11.1   .883   .902   58.
  305.25   3.577   42.4    .88   12.29    .53  16.3   3    16.0   33.0   40.3  1740.  122.   11.8   .898   .898   56.
  306.25   3.589   42.8    .59   14.15    .56  16.3   3    16.3   27.8   33.6  1722.  102.   14.0   .916   .916   49.
  307.25   3.601   43.3    .73   13.15    .54  16.3   3    16.7   31.1   37.6  1756.  113.   12.8   .909   .909   53.
  308.25   3.613   43.8    .73   13.13    .54  16.3   3    17.1   31.6   38.2  1773.  113.   12.9   .910   .910   53.
  309.26   3.626   44.3    .73   13.10    .54  16.3   3    17.5   32.2   38.6  1790.  114.   12.7   .912   .912   53.
  310.25   3.638   44.7    .50   14.02    .55  16.3   3    17.6   29.8   35.7  1788.  105.   13.7   .921   .921   50.
  311.25   3.650   45.0    .44   14.98    .57  16.3   3    18.0   27.6   32.3  1768.   95.   14.6   .928   .928   47.
  312.27   3.663   45.2    .29   15.96    .61  16.3   3    18.2   24.2   28.8  1776.   85.   15.4   .938   .938   43.
  313.26   3.676   45.4    .29   15.94    .61  16.3   3    18.4   24.3   29.0  1783.   85.   15.4   .938   .938   44.
  314.25   3.688   45.5    .15   16.91    .65  16.3   3    18.4   21.5   25.7  1776.   76.   16.1   .944   .944   40.
  315.25   3.701   45.8    .44   14.89    .57  16.3   3    18.7   27.8   33.4  1816.   96.   14.5   .929   .929   47.
  316.27   3.714   46.0    .29   15.89    .60  16.3   3    18.9   24.9   29.6  1804.   86.   15.3   .940   .940   44.
  317.24   3.726   46.1    .15   16.84    .64  16.3   3    18.9   22.1   26.3  1798.   77.   16.0   .945   .945   41.
  318.24   3.739   46.5    .59   13.87    .65  16.3   3    19.3   31.7   37.9  1854.  107.   13.4   .924   .924   51.
  319.24   3.752   46.8    .44   14.87    .57  16.2   3    19.5   28.9   34.3  1851.   97.   14.4   .932   .932   48.
  320.24   3.765   47.1    .44   14.80    .56  16.2   3    19.8   29.2   34.6  1862.   96.   14.3   .932   .932   48.
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10/01/76                                   VEHICLE PERFORMANCE SIMULATION                                              PAG
                                                                                                                       ---
                              DRIVING SCHEDULE ( HDCC02 )        USING ROUTE ( LEVEL  )

                                        INST          CUM
   SEC.    MILES     MPH     ACC      MPG     BSFC   MPG GEAR    ROLD     HPW      HPE   RPM   TORQ    VAC      SR     ETA PCT.WOT
---------------------------------------------------------------------------------------------------------------------------------

  321.24   3.778    47.7     .88     12.03     .52  16.2   3     20.3     39.4     47.2 1924.   129.    11.2    .914    .914   58.
  322.24   3.792    48.3     .88     12.00     .52  16.2   3     20.8     40.1     48.0 1944.   130.    11.2    .916    .916   59.
  323.23   3.805    49.0    1.03     11.22     .51  16.2   3     21.4     44.4     53.2 1964.   141.    10.2    .910    .910   62.
  324.23   3.819    49.7    1.03     11.19     .51  16.2   3     22.1     45.4     54.3 2008.   142.    10.1    .912    .912   62.
  325.23   3.833    50.3     .88     11.89     .51  16.1   3     22.6     42.8     50.9 2013.   133.    11.0    .921    .921   59.
  326.23   3.847    51.0    1.03     11.13     .50  16.1   3     23.3     47.2     56.2 2053.   144.    10.0    .916    .916   63.
  327.23   3.861    51.7    1.03     11.09     .50  16.1   3     24.0     48.2     57.3 2077.   145.     9.9    .917    .917   64.
  328.22   3.875    52.4    1.03     11.06     .50  16.1   3     24.7     49.2     58.4 2101.   146.     9.8    .919    .919   64.
  329.22   3.890    53.1    1.03     11.02     .50  16.0   3     25.4     50.3     59.6 2125.   147.     9.7    .921    .921   64.
  330.22   3.905    53.8    1.03     10.98     .50  16.0   3     26.1     51.3     60.7 2151.   148.     9.7    .922    .922   65.
  331.21   3.920    54.5    1.03     10.93     .50  16.0   3     26.9     52.4     61.9 2177.   149.     9.6    .923    .923   65.
  332.21   3.935    55.2    1.03     10.89     .50  15.9   3     27.6     53.4     63.1 2202.   151.     9.5    .924    .924   66.
  333.21   3.950    55.8     .88     11.49     .50  15.9   3     28.3     50.6     59.5 2214.   141.    10.3    .929    .929   63.
  334.21   3.966    56.4     .88     11.46     .50  15.9   3     28.9     51.5     60.4 2235.   142.    10.3    .930    .930   63.
  335.21   3.982    56.9     .73     12.14     .51  15.9   3     29.5     48.4     56.6 2237.   133.    11.1    .938    .938   60.
  336.19   3.997    57.0     .15     15.40     .58  15.9   3     29.6     33.5     39.1 2197.    94.    14.5    .956    .956   47.
  337.17   4.013    57.1     .15     15.39     .58  15.9   3     29.7     33.6     39.3 2201.    94.    14.5    .956    .956   47.
  338.18   4.029    57.3     .29     14.68     .55  15.9   3     30.0     37.5     43.8 2221.   104.    13.7    .951    .951   50.
  339.18   4.045    57.6     .44     13.66     .53  15.9   3     30.3     41.8     48.8 2243.   114.    12.8    .946    .946   54.
  340.19   4.061    57.8     .29     14.61     .55  15.9   3     30.5     38.1     44.5 2239.   104.    13.7    .951    .951   51.
  341.20   4.077    58.0     .29     14.58     .55  15.8   3     30.8     38.4     44.8 2246.   105.    13.6    .952    .952   51.
  342.18   4.093    58.1     .15     15.28     .58  15.8   3     30.9     34.8     40.6 2237.    95.    14.4    .957    .957   49.
  343.18   4.109    58.4     .44     13.55     .53  15.8   3     31.2     42.9     50.0 2273.   116.    12.7    .947    .947   54.
  344.18   4.125    58.7     .44     13.52     .53  15.8   3     31.6     43.3     50.4 2284.   116.    12.6    .947    .947   55.
  345.16   4.141    58.8     .15     15.22     .57  15.8   3     31.7     35.7     41.6 2263.    97.    14.3    .958    .958   48.
  346.14   4.157    58.9     .15     15.21     .57  15.8   3     31.8     35.8     41.7 2267.    97.    14.3    .958    .958   48.
  347.11   4.173    59.0     .15     15.20     .57  15.8   3     32.0     36.0     41.9 2271.    97.    14.3    .958    .958   48.
  348.11   4.190    59.0    0.00     15.80     .62  15.8   3     32.0     31.9     37.3 2262.    87.    15.1    .961    .961   45.
  349.09   4.206    58.9    -.15     16.50     .66  15.8   3     31.8     27.8     32.7 2248.    76.    16.0    .965    .965   42.
  350.07   4.222    58.8    -.15     16.52     .68  15.8   3     31.7     27.7     32.5 2245.    76.    16.0    .965    .965   41.
  351.08   4.238    58.6    -.29     17.31     .74  15.8   3     31.5     23.7     28.1 2226.    66.    16.8    .970    .970   38.
  352.09   4.255    58.4    -.29     17.37     .75  15.8   3     31.2     23.5     27.8 2218.    66.    16.8    .970    .970   39.
  353.10   4.271    58.2    -.29     17.42     .75  15.8   3     31.0     23.3     27.6 2211.    66.    16.8    .970    .970   38.
  354.06   4.287    58.1    -.15     16.65     .68  15.8   3     30.9     26.9     31.6 2219.    75.    16.1    .965    .965   41.
  355.06   4.302    58.0    -.15     16.69     .68  15.8   3     30.8     26.8     31.5 2215.    75.    16.1    .965    .965   41.
  356.04   4.318    57.9    -.15     16.71     .68  15.8   3     30.7     26.7     31.4 2211.    75.    16.1    .965    .965   41.
  357.04   4.334    57.6    -.44     18.41     .85  15.8   3     30.3     18.8     22.6 2188.    54.    17.7    .970    .970   34.
  358.05   4.350    57.4    -.29     17.65     .75  15.9   3     30.1     22.5     26.7 2181.    64.    16.9    .970    .970   37.
  359.06   4.367    57.2    -.29     17.71     .75  15.9   3     29.8     22.3     26.4 2173.    64.    17.0    .970    .970   37.
  360.04   4.382    57.1    -.15     16.89     .69  15.9   3     29.7     25.8     30.4 2181.    73.    16.2    .965    .965   40.
  361.02   4.398    57.0    -.15     16.91     .69  15.9   3     29.6     25.7     30.3 2177.    73.    16.2    .965    .965   40.
  362.02   4.413    57.0    0.00     16.11     .63  15.9   3     29.6     29.6     34.7 2187.    83.    15.4    .960    .960   44.
  362.99   4.429    56.9    -.15     16.93     .69  15.9   3     29.5     25.6     30.2 2174.    73.    16.2    .965    .965   40.
  363.99   4.445    56.9    0.00     16.13     .63  15.9   3     29.5     29.5     34.6 2184.    63.    15.4    .960    .960   44.
  364.99   4.460    56.9    0.00     16.13     .63  15.9   3     29.5     29.5     34.6 2184.    83.    15.4    .960    .960   44.
  365.97   4.476    57.0     .15     15.40     .58  15.9   3     29.6     33.5     39.1 2197.    94.    14.5    .956    .956   47.
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10/01/76                                         VEHICLE PERFORMANCE SIMULATION                                              PAG

                                      DRIVING SCHEDULE ( HDCG02 )          USING ROUTE ( LEVEL  )

                                   INST          CUM
   SEC.    MILES    MPH    ACC     MPG    BSFC   MPG GEAR    RDLD     HPW     HPE    RPM  TORQ    VAC     SR    ETA PCT.WOT
--------------------------------------------------------------------------------------------------------------------------

  366.97   4.492   57.0   0.00   16.11    .63  15.9   3      29.6    29.6    34.7  2187.   83.   15.4   .960   .960    44.
  367.97   4.508   57.0   0.00   16.11    .63  15.9   3      29.6    29.6    34.7  2187.   83.   15.4   .960   .960    44.
  368.97   4.523   57.0   0.00   16.11    .63  15.9   3      29.6    29.6    34.7  2187.   83.   15.4   .960   .960    44.
  369.97   4.539   57.0   0.00   16.11    .63  15.9   3      29.6    29.6    34.7  2187.   83.   15.4   .960   .960    44.
  370.97   4.555   57.0   0.00   16.11    .63  15.9   3      29.6    29.6    34.7  2187.   83.   15.4   .960   .960    44.
  371.97   4.571   57.0   0.00   16.11    .63  15.9   3      29.6    29.6    34.7  2187.   83.   15.4   .960   .960    44.
  372.97   4.587   57.0   0.00   16.11    .63  15.9   3      29.6    29.6    34.7  2187.   83.   15.4   .960   .960    44.
  373.97   4.603   57.0   0.00   16.11    .63  15.9   3      29.6    29.6    34.7  2187.   83.   15.4   .960   .960    44.
  374.95   4.618   56.9   -.15   16.93    .69  15.9   3      29.5    25.6    30.2  2174.   73.   16.2   .965   .965    40.
  375.93   4.633   56.8   -.15   16.96    .69  15.9   3      29.4    25.5    30.1  2170.   73.   16.2   .965   .965    40.
  376.93   4.649   56.5   -.44   18.85    .86  15.9   3      29.0    17.7    21.4  2146.   52.   17.9   .970   .970    33.
  377.93   4.665   56.2   -.44   18.97    .87  15.9   3      28.7    17.3    21.1  2135.   52.   17.9   .970   .970    33.
  378.94   4.681   56.0   -.29   18.09    .76  15.9   3      28.5    21.1    25.1  2128.   62.   17.1   .970   .970    36.
  379.94   4.696   56.0   0.00   16.29    .64  15.9   3      28.5    28.5    33.4  2150.   82.   15.5   .960   .960    43.
  380.94   4.712   56.0   0.00   16.29    .64  15.9   3      28.5    28.5    33.4  2150.   82.   15.5   .960   .960    43.
  381.92   4.727   56.1    .15   15.51    .59  15.9   3      28.6    32.4    37.9  2164.   92.   14.7   .955   .955    46.
  382.92   4.743   56.4    .44   13.80    .54  15.9   3      28.9    40.2    47.6  2199.  112.   12.9   .945   .945    53.
  383.92   4.758   56.7    .44   13.75    .54  15.9   3      29.3    40.6    47.5  2210.  113.   12.9   .945   .945    53.
  384.93   4.774   56.9    .29   14.74    .55  15.9   3      29.5    37.0    43.2  2206.  103.   13.8   .951   .951    50.
  385.94   4.790   57.1    .29   14.71    .55  15.9   3      29.7    37.2    43.5  2213.  103.   13.7   .951   .951    50.
  386.95   4.806   57.3    .29   14.68    .55  15.9   3      30.0    37.5    43.6  2221.  104.   13.7   .951   .951    50.
  387.93   4.822   57.4    .15   15.36    .58  15.9   3      30.1    34.0    39.7  2212.   94.   14.5   .956   .956    47.
  388.93   4.838   57.4   0.00   16.04    .63  15.9   3      30.1    30.1    35.2  2202.   84.   15.3   .961   .961    44.
  389.94   4.854   57.2   -.29   17.71    .75  15.9   3      29.8    22.3    26.4  2173.   64.   17.0   .970   .970    37.
  390.95   4.870   57.0   -.29   17.77    .76  15.9   3      29.6    22.1    26.2  2166.   64.   17.0   .970   .970    37.
  391.93   4.885   56.9   -.15   16.93    .69  15.9   3      29.5    25.6    30.2  2174.   73.   16.2   .965   .965    40.
  392.93   4.901   56.6   -.44   18.81    .86  15.9   3      29.2    17.8    21.6  2150.   53.   17.9   .970   .970    33.
  393.93   4.917   56.3   -.44   18.93    .87  15.9   3      28.8    17.6    21.2  2139.   52.   17.9   .970   .970    33.
  394.94   4.933   56.1   -.29   18.06    .76  15.9   3      28.6    21.2    25.2  2132.   62.   17.1   .970   .970    36.
  395.96   4.949   56.4    .44   13.80    .54  15.9   3      28.9    40.2    47.0  2199.  112.   12.9   .945   .945    53.
  396.96   4.964   56.7    .44   13.75    .54  15.9   3      29.3    40.6    47.5  2210.  113.   12.9   .945   .945    53.
  397.95   4.980   57.1    .59   12.85    .52  15.9   3      29.7    45.0    52.6  2233.  124.   11.9   .942   .942    57.
  398.95   4.996   57.5    .59   12.80    .52  15.9   3      30.2    45.6    53.2  2248.  124.   11.9   .943   .943    57.
  399.95   5.012   57.8    .44   13.61    .53  15.9   3      30.5    42.4    49.8  2251.  115.   12.7   .946   .946    54.
  400.96   5.028   58.0    .29   14.53    .55  15.9   3      30.8    38.4    44.8  2246.  105.   13.6   .952   .952    51.
  401.96   5.044   58.0   0.00   15.95    .62  15.9   3      30.8    30.8    36.0  2225.   85.   15.2   .961   .961    44.
  402.96   5.060   58.0   0.00   15.95    .62  15.9   3      30.8    30.8    36.0  2225.   85.   15.2   .961   .961    44.
  403.96   5.076   58.0   0.00   15.95    .62  15.9   3      30.8    30.8    36.0  2225.   85.   15.2   .961   .961    44.
  404.96   5.093   58.0   0.00   15.95    .62  15.9   3      30.8    30.8    36.0  2225.   85.   15.2   .961   .961    44.
  405.96   5.109   58.0   0.00   15.95    .62  15.9   3      30.8    30.8    36.0  2225.   85.   15.2   .961   .961    44.
  406.94   5.124   57.9   -.15   16.71    .68  15.9   3      30.7    26.7    31.4  2211.   75.   16.1   .965   .965    41.
  407.91   5.140   57.8   -.15   16.73    .68  15.9   3      30.5    26.6    31.3  2207.   74.   16.1   .965   .965    41.
  408.89   5.156   57.7   -.15   16.75    .68  15.9   3      30.4    26.5    31.1  2204.   74.   16.1   .965   .965    41.
  409.89   5.172   57.7   0.00   15.99    .63  15.9   3      30.4    30.4    35.6  2214.   84.   15.3   .961   .961    44.
  410.87   5.188   57.8    .15   15.31    .58  15.9   3      30.5    34.5    40.2  2226.   95.   14.4   .957   .957    43.
  411.85   5.203   57.9    .15   15.30    .58  15.9   3      30.7    34.6    40.3  2230.   95.   14.4   .957   .957    43.
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10/01/76                                   VEHICLE PERFORMANCE SIMULATION                                          PAG
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                                 DRIVING SCHEDULE ( HDC002 )          USING ROUTE ( LEVEL  )
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                                    INST          CUM
  SEC.     MILES    MPH    ACC       MPG   BSFC   MPG GEAR    RDLD     HPW     HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
-----------------------------------------------------------------------------------------------------------------------------

 412.83    5.219   59.0    .15    15.29   .58  15.9    3     30.8    34.7    40.5 2234.   95.   14.4   .957   .957    48.
 413.80    5.235   58.1    .15    15.29   .58  15.9    3     30.9    34.8    40.6 2237.   95.   14.4   .957   .957    49.
 414.80    5.251   58.4    .44    13.55   .53  15.9    3     31.2    42.9    50.0 2273.  116.   12.7   .947   .947    54.
 415.81    5.267   58.9    .73    11.97   .51  15.8    3     31.8    51.4    59.9 2307.  136.   10.3   .941   .941    61.
 416.82    5.284   59.1    .29    14.41   .55  15.8    3     32.1    39.9    46.4 2286.  107.   13.5   .953   .953    52.
 417.82    5.300   59.4    .44    13.43   .53  15.9    3     32.4    44.3    51.6 2309.  117.   12.5   .948   .948    55.
 418.81    5.317   59.8    .59    12.56   .52  15.8    3     32.9    49.0    57.0 2334.  128.   11.6   .944   .944    59.
 419.79    5.333   59.9    .15    15.11   .57  15.8    3     33.1    37.1    43.2 2304.   98.   14.2   .958   .958    49.
 420.79    5.350   59.9   0.00    15.68   .61  15.8    3     33.1    33.0    38.6 2286.   88.   15.0   .962   .962    46.
 421.77    5.366   59.8   -.15    16.33   .67  15.8    3     32.9    28.8    33.8 2282.   78.   15.3   .966   .966    42.
 422.78    5.383   59.6   -.29    17.06   .74  15.8    3     32.7    24.8    29.3 2264.   68.   16.6   .970   .970    39.
 423.79    5.399   59.4   -.29    17.11   .74  15.8    3     32.4    24.6    29.0 2256.   68.   16.7   .970   .970    39.
 424.80    5.416   59.2   -.29    17.16   .74  15.8    3     32.2    24.4    28.8 2249.   67.   16.7   .970   .970    39.
 425.78    5.432   59.1   -.15    16.46   .67  15.8    3     32.1    26.0    32.9 2256.   77.   15.9   .966   .966    42.
 426.76    5.448   59.0   -.15    16.48   .67  15.8    3     32.0    27.9    32.8 2252.   76.   15.9   .965   .965    42.
 427.74    5.464   58.9   -.15    16.50   .68  15.8    3     31.8    27.8    32.7 2248.   76.   16.0   .965   .965    42.
 428.75    5.481   58.7   -.29    17.29   .74  15.8    3     31.6    23.9    28.2 2230.   66.   16.8   .970   .970    38.
 429.73    5.497   58.6   -.15    16.56   .68  15.8    3     31.5    27.5    32.3 2237.   76.   16.0   .965   .965    41.
 430.70    5.513   58.5   -.15    16.59   .68  15.8    3     31.4    27.4    32.1 2233.   76.   16.0   .965   .965    41.
 431.66    5.528   58.4   -.15    16.60   .66  15.8    3     31.2    27.2    32.0 2230.   75.   16.0   .965   .965    41.
 432.68    5.545   58.4   0.00    15.89   .62  15.8    3     31.2    31.2    36.5 2240.   86.   15.2   .961   .961    45.
 433.66    5.561   58.3   -.15    16.62   .68  15.8    3     31.1    27.1    31.9 2226.   75.   16.0   .965   .965    41.
 434.64    5.576   58.2   -.15    16.64   .68  15.8    3     31.0    27.0    31.8 2222.   75.   16.1   .965   .965    41.
 435.62    5.592   58.1   -.15    16.66   .68  15.8    3     30.9    26.9    31.6 2219.   75.   16.1   .965   .965    41.
 436.59    5.608   58.0   -.15    16.69   .68  15.9    3     30.8    26.8    31.5 2215.   75.   16.1   .965   .965    41.
 437.57    5.624   57.9   -.15    16.71   .68  15.9    3     30.7    26.7    31.4 2211.   75.   16.1   .965   .961    44.
 438.57    5.640   57.9   0.00    15.96   .62  15.9    3     30.7    30.6    35.9 2221.   85.   15.3   .961   .961    44.
 439.57    5.656   57.9   0.00    15.96   .62  15.9    3     30.7    30.6    35.9 2221.   85.   15.3   .961   .961    44.
 440.57    5.672   57.9   0.00    15.96   .62  15.9    3     30.7    30.6    35.9 2221.   85.   15.3   .961   .961    44.
 441.57    5.688   57.9   0.00    15.96   .62  15.9    3     30.7    30.6    35.9 2221.   85.   15.3   .961   .957    43.
 442.55    5.704   58.0    .15    15.29   .58  15.9    3     30.8    34.7    40.5 2234.   95.   14.4   .957   .957    48.
 443.53    5.719   58.1    .15    15.29   .58  15.8    3     30.9    34.8    40.6 2237.   95.   14.4   .957   .961    44.
 444.53    5.736   58.1   0.00    15.93   .62  15.8    3     30.9    30.9    36.1 2229.   85.   15.2   .961   .957    48.
 445.50    5.751   58.2    .15    15.27   .58  15.8    3     31.0    35.0    40.8 2241.   96.   14.4   .957   .961    44.
 446.50    5.768   58.2   0.00    15.92   .62  15.8    3     31.0    31.0    36.3 2232.   85.   15.2   .961   .961    44.
 447.50    5.784   58.2   0.00    15.92   .62  15.8    3     31.0    31.0    36.3 2232.   85.   15.2   .961   .965    41.
 448.48    5.800   58.1   -.15    16.66   .68  15.8    3     30.9    26.9    31.6 2219.   75.   16.1   .965   .965    41.
 449.46    5.815   58.0   -.15    16.69   .68  15.9    3     30.8    26.8    31.5 2215.   75.   16.1   .965   .961    44.
 450.46    5.831   58.0   0.00    15.95   .62  15.9    3     30.8    30.8    36.0 2225.   85.   15.2   .961   .961    44.
 451.46    5.848   58.0   0.00    15.95   .62  15.9    3     30.8    30.8    36.0 2225.   85.   15.2   .961   .961    44.
 452.46    5.864   58.0   0.00    15.95   .62  15.9    3     30.8    30.8    36.0 2225.   85.   15.2   .961   .961    44.
 453.46    5.880   58.0   0.00    15.95   .62  15.9    3     30.8    30.8    36.0 2225.   85.   15.2   .961   .961    44.
 454.46    5.896   58.0   0.00    15.95   .62  15.9    3     30.8    30.8    36.0 2225.   85.   15.2   .965   .965    41.
 455.44    5.912   57.9   -.15    16.71   .68  15.9    3     30.7    26.7    31.4 2211.   75.   16.1   .961   .961    44.
 456.44    5.928   57.9   0.00    15.96   .62  15.9    3     30.7    30.6    35.9 2221.   85.   15.3   .961   .961    44.
 457.42    5.943   58.0    .15    15.29   .58  15.9    3     30.8    34.7    40.5 2234.   95.   14.4   .957   .957    48.
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                                                                                                                  PAG
                                        VEHICLE PERFORMANCE SIMULATION
  10/01/76
                              DRIVING SCHEDULE ( HDCC02 )            USING ROUTE ( LEVEL  )

                                    INST         CUM
   SEC.   MILES    MPH    ACC      MPG  BSFC   MPG GEAR   RDLD    HPW    HPE    RPM  TORQ    VAC     SR    ETA PCT.WOT
----------------------------------------------------------------------------------------------------------------------
 458.39   5.959   58.1    .15   15.28   .58  15.9   3   30.9   34.6   40.6  2237.   95.   14.4   .957   .957    48.
 459.39   5.975   58.1   0.00   15.93   .62  15.9   3   30.9   30.9   36.1  2229.   85.   15.2   .961   .961    44.
 460.37   5.991   58.2    .15   15.27   .58  15.9   3   31.0   35.0   40.6  2241.   96.   14.4   .957   .957    48.
 461.35   6.007   58.3    .15   15.26   .58  15.8   3   31.1   35.1   40.9  2245.   96.   14.4   .957   .957    48.
 462.35   6.023   58.3   0.00   15.90   .62  15.8   3   31.1   31.1   36.4  2236.   85.   15.2   .961   .961    45.
 463.35   6.039   58.3   0.00   15.90   .62  15.8   3   31.1   31.1   36.4  2236.   85.   15.2   .961   .961    45.
 464.33   6.055   58.2   -.15   16.64   .68  15.9   3   31.0   27.0   31.8  2222.   75.   16.1   .965   .965    41.
 465.30   6.071   58.1   -.15   16.66   .68  15.9   3   30.9   26.9   31.6  2219.   75.   16.1   .965   .965    41.
 466.28   6.087   58.0   -.15   16.69   .68  15.9   3   30.8   26.8   31.5  2215.   75.   16.1   .965   .965    41.
 467.29   6.103   57.8   -.29   17.53   .75  15.9   3   30.5   22.9   27.1  2196.   65.   16.9   .970   .970    38.
 468.29   6.119   57.5   -.44   18.45   .85  15.9   3   30.2   16.7   22.5  2184.   54.   17.9   .970   .970    34.
 469.29   6.135   57.1   -.59   19.85   .99  15.9   3   29.7   14.4   17.9  2169.   43.   18.5   .970   .970    30.
 470.27   6.150   57.0   -.15   16.91   .69  15.9   3   29.6   25.7   30.3  2177.   73.   16.2   .965   .965    40.
 471.26   6.166   56.6   -.59   20.08  1.00  15.9   3   29.2   14.0   17.4  2150.   42.   18.6   .970   .970    30.
 472.26   6.182   56.1   -.73   21.84  1.22  15.9   3   28.6   10.0   13.0  2131.   32.   19.3   .970   .970    27.
 473.24   6.197   56.0   -.15   17.15   .69  15.9   3   28.5   24.7   29.1  2140.   71.   16.3   .964   .964    40.
 474.25   6.213   55.8   -.29   18.16   .76  15.9   3   28.3   20.9   24.9  2121.   62.   17.1   .970   .970    36.
 475.25   6.228   55.5   -.44   19.24   .87  15.9   3   27.9   16.8   20.4  2108.   51.   18.0   .970   .970    33.
 476.25   6.243   55.2   -.44   19.39   .87  15.9   3   27.6   16.6   20.1  2097.   50.   18.0   .970   .970    32.
 477.23   6.258   55.1   -.15   17.40   .70  15.9   3   27.5   23.7   28.1  2106.   70.   16.5   .964   .964    39.
 478.21   6.273   55.0   -.15   17.43   .70  15.9   3   27.4   23.6   27.9  2103.   70.   16.5   .964   .964    39.
 479.19   6.288   54.9   -.15   17.45   .70  15.9   3   27.3   23.5   27.8  2099.   70.   16.5   .964   .964    39.
 480.19   6.304   54.9   0.00   16.51   .64  15.9   3   27.3   27.3   32.1  2109.   80.   15.6   .959   .959    42.
 481.19   6.319   54.9   0.00   16.51   .64  15.9   3   27.3   27.3   32.1  2109.   80.   15.6   .959   .959    42.
 482.19   6.334   54.9   0.00   16.51   .64  15.9   3   27.3   27.3   32.1  2109.   80.   15.6   .959   .959    42.
 483.19   6.349   54.9   0.00   16.51   .64  15.9   3   27.3   27.3   32.1  2109.   80.   15.6   .959   .959    42.
 484.19   6.365   54.9   0.00   16.51   .64  15.9   3   27.3   27.3   32.1  2109.   80.   15.6   .959   .959    42.
 485.16   6.380   55.0    .15   15.65   .59  15.9   3   27.4   31.1   36.5  2124.   90.   14.9   .954   .954    46.
 486.16   6.395   55.0   0.00   16.49   .64  15.9   3   27.4   27.4   32.2  2113.   80.   15.6   .959   .959    42.
 487.16   6.410   55.0   0.00   16.49   .64  15.9   3   27.4   27.4   32.2  2113.   80.   15.6   .959   .959    42.
 488.16   6.425   55.0   0.00   16.49   .64  15.9   3   27.4   27.4   32.2  2113.   80.   15.6   .959   .959    42.
 489.16   6.441   55.0   0.00   16.49   .64  15.9   3   27.4   27.4   32.2  2113.   80.   15.6   .959   .959    42.
 490.16   6.456   55.0   0.00   16.49   .64  15.9   3   27.4   27.4   32.2  2113.   80.   15.6   .959   .959    42.
 491.14   6.471   55.1    .15   15.63   .59  15.9   3   27.5   31.2   36.6  2128.   90.   14.9   .954   .954    45.
 492.14   6.486   55.1   0.00   16.47   .64  15.9   3   27.5   27.5   32.3  2116.   80.   15.6   .960   .960    42.
 493.12   6.501   55.0   -.15   17.43   .70  15.9   3   27.4   23.6   27.9  2103.   70.   16.5   .964   .964    39.
 494.10   6.516   54.9   -.15   17.45   .70  15.9   3   27.3   23.5   27.8  2099.   70.   16.5   .964   .964    39.
 495.10   6.531   54.9   0.00   16.51   .64  15.9   3   27.3   27.3   32.1  2109.   80.   15.6   .959   .959    42.
 496.08   6.546   54.8   -.15   17.48   .70  15.9   3   27.2   23.4   27.7  2095.   69.   16.5   .964   .964    39.
 497.05   6.561   54.7   -.15   17.51   .70  16.0   3   27.1   23.3   27.6  2091.   69.   16.5   .964   .964    39.
 498.03   6.576   54.6   -.15   17.54   .70  16.0   3   27.0   23.2   27.5  2088.   69.   16.5   .964   .964    39.
 499.04   6.591   54.4   -.29   18.68   .77  16.0   3   26.8   19.6   23.3  2069.   59.   17.3   .969   .969    35.
 500.02   6.606   54.3   -.15   17.63   .70  16.0   3   26.6   22.9   27.1  2076.   69.   16.5   .964   .964    39.
 501.02   6.621   54.3   0.00   16.64   .64  16.0   3   26.6   26.6   31.3  2086.   79.   15.7   .959   .959    42.
 502.00   6.636   54.2   -.15   17.66   .70  16.0   3   26.5   22.8   27.0  2073.   69.   16.6   .964   .964    38.
 502.98   6.651   54.1   -.15   17.69   .70  16.0   3   26.4   22.7   26.9  2069.   68.   16.6   .964   .964    38.
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10/01/76                                  VEHICLE PERFORMANCE SIMULATION                                     PAG
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                                  DRIVING SCHEDULE ( HDC002 )        USING ROUTE ( LEVEL   )
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                                     INST          CUM
    SEC.    MILES     MPH     ACC     MPG    BSFC   MPG GEAR      RDLD      HPW      HPE     RPM   TORQ    VAC     SR    ETA PCT.WOT
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   503.98   6.666    54.1    0.00    16.68    .64  16.0   3       26.4      26.4     31.1  2079.    79.   15.7   .959   .959    42.
   504.98   6.681    54.1    0.00    16.68    .64  16.0   3       26.4      26.4     31.1  2079.    79.   15.7   .959   .959    42.
   505.95   6.695    54.0    -.15    17.72    .70  16.0   3       26.3      22.6     26.8  2065.    68.   16.6   .964   .964    38.
   506.95   6.710    54.0    0.00    16.71    .64  16.0   3       26.3      26.3     31.0  2075.    78.   15.7   .959   .959    42.
   507.95   6.725    54.0    0.00    16.71    .64  16.0   3       26.3      26.3     31.0  2075.    78.   15.7   .959   .959    42.
   508.95   6.740    54.0    0.00    16.71    .64  16.0   3       26.3      26.3     31.0  2075.    78.   15.7   .959   .959    42.
   509.95   6.755    54.0    0.00    16.71    .64  16.0   3       26.3      26.3     31.0  2075.    78.   15.7   .959   .959    42.
   510.95   6.770    54.0    0.00    16.71    .64  16.0   3       26.3      26.3     31.0  2075.    78.   15.7   .959   .959    42.
   511.95   6.785    54.0    0.00    16.71    .64  16.0   3       26.3      26.3     31.0  2075.    78.   15.7   .959   .959    42.
   512.95   6.800    54.0    0.00    16.71    .64  16.0   3       26.3      26.3     31.0  2075.    78.   15.7   .959   .959    42.
   513.93   6.815    54.1     .15    15.78    .60  16.0   3       26.4      30.1     35.4  2091.    89.   14.9   .953   .953    45.
   514.91   6.830    54.2     .15    15.76    .60  16.0   3       26.5      30.2     35.5  2095.    89.   14.9   .954   .954    45.
   515.91   6.845    54.5     .44    14.06    .54  16.0   3       26.9      37.7     44.2  2129.   109.   13.2   .944   .944    52.
   516.91   6.860    54.8     .44    14.02    .54  16.0   3       27.2      38.1     44.6  2140.   110.   13.1   .944   .944    52.
   517.89   6.875    54.9     .15    15.66    .60  16.0   3       27.3      31.0     36.4  2120.    90.   14.8   .954   .954    46.
   518.86   6.890    55.0     .15    15.65    .59  16.0   3       27.4      31.1     36.5  2124.    90.   14.8   .954   .954    46.
   519.84   6.905    55.1     .15    15.63    .59  16.0   3       27.5      31.2     36.6  2128.    90.   14.8   .954   .954    46.
   520.82   6.920    55.2     .15    15.62    .59  16.0   3       27.6      31.4     36.7  2131.    91.   14.8   .954   .954    46.
   521.82   6.935    55.2    0.00    16.45    .64  16.0   3       27.6      27.6     32.4  2120.    80.   15.6   .960   .960    42.
   522.80   6.950    55.3     .15    15.61    .59  16.0   3       27.7      31.5     36.9  2135.    91.   14.7   .955   .955    46.
   523.78   6.965    55.4     .15    15.59    .59  16.0   3       27.8      31.6     37.0  2139.    91.   14.7   .955   .955    46.
   524.75   6.980    55.5     .15    15.58    .59  16.0   3       27.9      31.7     37.1  2142.    91.   14.7   .955   .955    46.
   525.73   6.995    55.6     .15    15.57    .59  16.0   3       28.0      31.8     37.3  2146.    91.   14.7   .955   .955    46.
   526.71   7.010    55.7     .15    15.56    .59  16.0   3       28.2      31.9     37.4  2150.    91.   14.7   .955   .955    46.
   527.69   7.025    55.8     .15    15.54    .59  16.0   3       28.3      32.1     37.5  2153.    92.   14.7   .955   .955    46.
   528.66   7.041    55.9     .15    15.53    .59  16.0   3       28.4      32.2     37.7  2157.    92.   14.7   .955   .955    46.
   529.64   7.056    56.0     .15    15.52    .59  16.0   3       28.5      32.3     37.8  2161.    92.   14.7   .955   .955    46.
   530.64   7.071    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   531.64   7.087    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   532.64   7.102    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   533.64   7.118    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   534.64   7.134    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   535.64   7.149    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   536.64   7.165    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   537.64   7.180    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   538.64   7.196    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   539.64   7.211    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   540.64   7.227    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   541.64   7.242    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   542.64   7.258    56.0    0.00    16.29    .64  16.0   3       28.5      28.5     33.4  2150.    82.   15.5   .960   .960    43.
   543.62   7.273    55.9    -.15    17.18    .69  16.0   3       28.4      24.6     29.0  2136.    71.   16.3   .964   .964    39.
   544.62   7.289    55.9    0.00    16.31    .64  16.0   3       28.4      28.4     33.3  2146.    81.   15.5   .960   .960    43.
   545.62   7.304    55.9    0.00    16.31    .64  16.0   3       28.4      28.4     33.3  2146.    81.   15.5   .960   .960    43.
   546.60   7.319    55.8    -.15    17.21    .69  16.0   3       28.3      24.5     28.9  2132.    71.   16.4   .964   .964    39.
   547.61   7.335    55.6    -.29    18.23    .76  16.0   3       28.0      20.7     24.6  2113.    61.   17.2   .970   .970    36.
   548.62   7.351    55.4    -.29    18.30    .77  16.0   3       27.8      20.5     24.4  2106.    61.   17.2   .970   .970    36.
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10/01/76                                   VEHICLE PERFORMANCE SIMULATION                                    PAG
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                               DRIVING SCHEDULE ( HDC002 )          USING ROUTE ( LEVEL   )
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                                  INST          CUM
   SEC.    MILES    MPH    ACC     MPG   BSFC   MPG GEAR    RDLD     HPW      HPE   RPM  TORQ    VAC      SR     ETA PCT.WOT
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 549.63    7.366   55.2   -.29   18.38    .77  16.0   3     27.6    20.3     24.2 2098.   61.   17.2    .969    .969     36.
 550.61    7.381   55.1   -.15   17.40    .70  16.0   3     27.5    23.7     28.1 2106.   70.   16.5    .964    .964     39.
 551.59    7.396   55.0   -.15   17.43    .70  16.0   3     27.4    23.6     27.9 2103.   70.   16.5    .964    .964     39.
 552.57    7.411   54.9   -.15   17.45    .70  16.0   3     27.3    23.5     27.8 2099.   70.   16.5    .964    .964     39.
 553.57    7.426   54.6   -.44   19.69    .88  16.0   3     27.0    16.0     19.5 2074.   49.   18.1    .970    .970     32.
 554.58    7.442   54.4   -.29   18.68    .77  16.0   3     26.8    19.6     23.3 2069.   59.   17.3    .969    .969     35.
 555.59    7.457   54.2   -.29   18.76    .77  16.0   3     26.5    19.4     23.1 2061.   59.   17.4    .969    .969     35.
 556.57    7.472   54.1   -.15   17.69    .70  16.0   3     26.4    22.7     26.9 2069.   68.   16.6    .964    .964     39.
 557.57    7.487   53.8   -.44   20.09    .88  16.0   3     26.1    15.3     18.7 2044.   48.   18.2    .970    .970     31.
 558.56    7.501   53.4   -.59   21.54   1.06  16.0   3     25.7    11.4     14.4 2028.   37.   19.0    .970    .970     28.
 559.54    7.516   53.3   -.15   17.95    .70  16.0   3     25.6    22.0     26.0 2039.   67.   16.7    .963    .963     38.
 560.55    7.531   53.1   -.29   19.24    .77  16.0   3     25.4    18.4     22.0 2020.   57.   17.5    .969    .969     34.
 561.56    7.546   52.9   -.29   19.33    .78  16.1   3     25.2    18.2     21.8 2012.   57.   17.5    .969    .969     34.
 562.56    7.560   52.6   -.44   20.68    .89  16.1   3     24.9    14.4     17.6 1998.   46.   18.3    .970    .970     31.
 563.57    7.575   52.4   -.29   19.52    .78  16.1   3     24.7    17.8     21.3 1994.   56.   17.6    .969    .969     34.
 564.59    7.590   52.2   -.29   19.56    .78  16.1   3     24.5    17.6     21.1 1986.   56.   17.6    .969    .969     34.
 565.56    7.604   52.1   -.15   18.35    .71  16.1   3     24.4    20.8     24.6 1994.   65.   16.9    .963    .963     37.
 566.54    7.618   52.0   -.15   18.36    .71  16.1   3     24.3    20.7     24.7 1990.   65.   16.8    .963    .963     37.
 567.54    7.633   52.0   0.00   17.21    .65  16.1   3     24.3    24.3     28.7 2000.   75.   16.0    .958    .958     40.
 568.54    7.647   52.0   0.00   17.21    .65  16.1   3     24.3    24.3     28.7 2000.   75.   16.0    .958    .958     40.
 569.54    7.661   52.0   0.00   17.21    .65  16.1   3     24.3    24.3     28.7 2000.   75.   16.0    .958    .958     40.
 570.52    7.676   52.1    .15   16.11    .61  16.1   3     24.4    27.9     32.9 2018.   86.   15.1    .951    .951     44.
 571.50    7.690   52.0   -.15   18.36    .71  16.1   3     24.3    20.7     24.7 1990.   65.   16.8    .963    .963     37.
 572.50    7.704   52.0   0.00   17.21    .65  16.1   3     24.3    24.3     28.7 2000.   75.   16.0    .958    .958     40.
 573.47    7.718   51.9   -.15   18.39    .71  16.1   3     24.2    20.6     24.5 1987.   65.   16.9    .963    .963     37.
 574.47    7.733   51.6   -.44   20.89    .91  16.1   3     23.9    13.6     16.7 1960.   45.   18.5    .970    .970     30.
 575.49    7.747   51.4   -.29   19.72    .79  16.1   3     23.7    16.9     20.3 1956.   55.   17.7    .968    .968     33.
 576.49    7.761   51.1   -.44   21.00    .93  16.1   3     23.4    13.2     16.2 1941.   44.   18.6    .970    .970     30.
 577.48    7.775   50.7   -.59   22.43   1.15  16.1   3     23.0     9.4     12.1 1926.   33.   19.4    .970    .970     26.
 578.47    7.789   50.3   -.59   22.56   1.16  16.1   3     22.6     9.1     11.8 1911.   33.   19.5    .970    .970     26.
 579.48    7.803   49.8   -.73   24.42   1.57  16.1   3     22.2     5.6      8.0 1892.   22.   20.5    .970    .970     22.
 580.48    7.817   49.3   -.73   24.68   1.61  16.1   3     21.7     5.4      7.7 1873.   21.   20.7    .970    .970     22.
 581.48    7.831   48.7   -.88   27.54   2.98  16.2   3     21.2     1.7      3.7 1850.   10.   22.0    .970    .970     18.
 582.49    7.844   48.2   -.73   25.27   1.70  16.2   3     20.7     4.7      6.9 1831.   20.   21.0    .970    .970     21.
 583.47    7.857   48.1   -.15   19.03    .75  16.2   3     20.6    17.4     20.8 1844.   59.   17.4    .961    .961     35.
 584.44    7.870   48.0   -.15   19.04    .75  16.2   3     20.6    17.3     20.7 1841.   59.   17.4    .961    .961     35.
 585.44    7.884   48.0   0.00   17.77    .68  16.2   3     20.6    20.5     24.5 1853.   69.   16.6    .955    .955     38.
 586.42    7.897   48.1    .15   16.61    .63  16.2   3     20.6    23.9     28.4 1872.   80.   15.7    .947    .947     42.
 587.42    7.910   48.4    .44   14.74    .56  16.2   3     20.9    30.6     36.2 1907.  100.   14.1    .935    .935     48.
 588.43    7.924   48.9    .73   12.79    .53  16.2   3     21.4    37.6     44.7 1952.  120.   12.1    .923    .923     55.
 589.40    7.937   49.0    .15   16.50    .62  16.2   3     21.4    24.8     29.4 1905.   81.   15.6    .948    .948     42.
 590.36    7.950   49.1    .15   16.49    .62  16.2   3     21.5    24.9     29.5 1908.   81.   15.6    .948    .948     42.
 591.38    7.964   49.1   0.00   17.62    .67  16.2   3     21.5    21.5     25.6 1893.   71.   16.4    .956    .956     39.
 592.36    7.977   49.0   -.15   18.87    .74  16.2   3     21.4    18.1     21.7 1878.   61.   17.3    .962    .962     35.
 593.36    7.991   49.0   0.00   17.63    .67  16.2   3     21.4    21.4     25.5 1890.   71.   16.4    .956    .956     39.
 594.34    8.004   48.9   -.15   18.89    .74  16.2   3     21.4    18.0     21.6 1874.   60.   17.3    .962    .962     35.
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10/01/76                              VEHICLE PERFORMANCE SIMULATION                                    PAG

                              DRIVING SCHEDULF ( HDC(C2 )         USING ROUTE ( LEVFL  )

                                   INST        CUM
    SEC.     MILES    MPH     ACC     MPG   BSFC  MPG GEAR      ROLD     HPW      HPE   RPM  TORQ    VAC     SR     ETA PCT.WOT
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   595.34    8.018   48.6    -.44   21.63    .98 16.2   3       21.1     11.4     14.1 1846.   40.   18.9   .970   .970    23.
   596.34    8.031   48.3    -.44   21.71    .99 16.2   3       20.8     11.2     13.9 1835.   40.   19.0   .970   .970    23.
   597.34    8.045   48.0    -.44   21.80   1.00 16.2   3       20.6     10.9     13.7 1823.   39.   19.0   .970   .970    23.
   598.31    8.058   47.9    -.15   19.06    .75 16.2   3       20.5     17.2     20.6 1837.   59.   17.4   .961   .961    35.
   599.29    8.071   47.8    -.15   19.08    .75 16.2   3       20.4     17.1     20.5 1833.   59.   17.4   .961   .961    35.
   600.27    8.084   47.7    -.15   19.10    .75 16.2   3       20.3     17.0     20.4 1829.   59.   17.4   .961   .961    34.
   601.28    8.097   47.9     .29   15.70    .59 16.2   3       20.5     26.8     31.7 1874.   89.   15.0   .942   .942    45.
   602.28    8.110   48.3     .59   13.70    .54 16.2   3       20.8     33.8     40.2 1920.  110.   13.1   .927   .927    52.
   603.27    8.124   49.0    1.03   11.22    .51 16.2   3       21.4     44.4     53.2 1984.  141.   10.2   .910   .910    62.
   604.25    8.137   49.1     .15   16.49    .62 16.2   3       21.5     24.9     29.5 1908.   81.   15.5   .948   .948    42.
   605.23    8.150   49.0    -.15   18.87    .74 16.2   3       21.4     18.1     21.7 1878.   61.   17.3   .962   .962    35.
   606.21    8.164   48.9    -.15   18.89    .74 16.2   3       21.4     18.0     21.6 1874.   60.   17.3   .962   .962    35.
   607.21    8.177   48.0   -1.32   49.82  99.99 16.2   3       21.6     -7.2     -5.4 1590.  -18.   23.7  1.113   .899     7.
   608.21    8.190   47.1   -1.32   51.90  99.99 16.2   3       20.8     -7.4     -5.6 1549.  -19.   23.7  1.121   .892     6.
   609.21    8.203   46.2   -1.32   54.15  99.99 16.3   3       20.1     -7.6     -5.7 1509.  -20.   23.7  1.128   .886     6.
   609.93    8.213   46.1    -.15   19.38    .77 16.3   3       18.9     15.8     19.0 1770.   56.   17.6   .960   .960    34.
   610.93    8.225   46.1    0.00   18.03    .70 16.3   3       18.9     18.9     22.6 1784.   67.   16.8   .953   .953    37.
   611.91    8.238   46.2     .15   16.82    .64 16.3   3       19.0     22.2     26.4 1802.   77.   16.0   .945   .945    41.
   612.92    8.251   46.9    1.03   11.31    .51 16.3   3       19.6     41.6     50.2 1911.  138.   10.3   .904   .904    61.
   613.92    8.264   47.8    1.32    9.71    .51 16.2   3       20.4     49.1     59.4 1965.  158.    8.5   .895   .895    69.
   614.92    8.278   49.0    1.76    7.22    .58 16.2   3       21.4     60.6     72.7 2077.  184.    6.5   .869   .904    76.
   615.92    8.291   49.7    1.03   11.19    .51 16.2   3       22.1     45.4     54.3 2008.  142.   10.1   .912   .912    62.
   616.92    8.305   50.6    1.32    9.31    .52 16.2   3       22.9     53.3     64.1 2066.  163.    8.3   .902   .902    69.
   617.92    8.319   51.5    1.32    9.14    .53 16.2   3       23.6     54.7     65.6 2097.  165.    8.2   .905   .905    70.
   618.92    8.334   52.2    1.03   11.07    .50 16.1   3       24.5     48.9     58.1 2094.  146.    9.6   .919   .919    64.
   619.92    8.348   52.7     .73   12.47    .52 16.1   3       25.0     42.5     50.2 2090.  126.   11.6   .929   .929    57.
   620.92    8.363   53.0     .44   14.26    .55 16.1   3       25.3     35.9     42.1 2073.  107.   13.4   .942   .942    51.
   621.92    8.378   53.6     .88   11.65    .51 16.1   3       25.9     47.3     56.0 2134.  138.   10.5   .926   .926    61.
   622.92    8.393   54.0     .59   13.18    .53 16.1   3       26.3     40.6     47.9 2120.  119.   12.3   .939   .939    55.
   623.89    8.407   54.1     .15   15.79    .60 16.1   3       26.4     30.1     35.4 2091.   89.   14.9   .953   .953    45.
   624.89    8.423   54.4     .44   14.04    .54 16.1   3       26.8     37.6     44.2 2125.  109.   13.2   .944   .944    52.
   625.89    8.438   54.7     .44   14.01    .54 16.1   3       27.1     38.0     44.6 2136.  110.   13.1   .944   .944    52.
   626.89    8.453   55.1     .59   13.07    .53 16.1   3       27.5     42.3     49.5 2159.  120.   12.2   .941   .941    56.
   627.89    8.468   55.4     .44   13.93    .54 16.1   3       27.8     38.9     45.5 2162.  111.   13.1   .944   .944    52.
   628.89    8.484   55.4    0.00   16.41    .64 16.1   3       27.8     27.8     32.7 2128.   81.   15.6   .960   .960    43.
   629.88    8.499   55.0    -.59   20.83   1.03 16.1   3       27.4     12.6     15.8 2089.   40.   18.9   .970   .970    29.
   630.89    8.514   54.5    -.73   22.47   1.29 16.1   3       26.9      8.8     11.6 2070.   29.   19.5   .970   .970    25.
   631.89    8.529   53.6   -1.32   39.60  99.99 16.1   3       26.7     -5.5     -3.6 1848.  -10.   23.4  1.069   .936    11.
   632.89    8.544   52.5   -1.61   63.44  99.99 16.1   3       26.5    -11.9    -10.0 1803.  -29.   24.4  1.073   .932     4.
   633.89    8.558   50.2   -3.37  104.13  99.99 16.2   3       29.7    -14.6    -12.9 1692.  -40.   25.0  1.093   .915     0.
   634.89    8.572   48.2   -2.93   99.22  99.99 16.2   3       26.4    -13.4    -11.6 1599.  -38.   24.9  1.111   .900     0.
   635.89    8.585   46.5   -2.49   96.09  99.99 16.2   3       23.6    -12.4    -10.4 1522.  -36.   24.6  1.126   .888     0.
   636.84    8.597   46.2    -.44   22.36   1.04 16.2   3       19.0      9.8     12.3 1755.   37.   19.3   .970   .970    27.
   637.85    8.610   46.0    -.29   20.76    .88 16.2   3       18.9     12.8     15.6 1754.   47.   18.4   .967   .967    33.
   638.85    8.623   46.0    0.00   18.04    .70 16.2   3       18.9     18.8     22.5 1760.   67.   16.9   .952   .952    37.
   639.85    8.636   46.3     .44   14.90    .57 16.2   3       19.1     28.4     33.8 1834.   97.   14.4   .930   .930    47.
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10/01/76                               VEHICLE PERFORMANCE SIMULATION                                   PAC
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                           DRIVING SCHEDULE ( HDC002 )        USING ROUTE ( LEVEL   )
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                                   INST          CUM
    SEC.     MILES    MPH    ACC    MPG    BSFC  MPG GEAR    RDLD     HPW     HPE   RPM   TORQ   VAC     SR    ETA PCT.WOT
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  640.86    8.640   46.8    .73   12.96    .53  16.2   3     19.5    35.0    41.9  1876.  117.  12.3   .919   .919   54.
  641.85    8.662   47.5   1.03   11.29    .51  16.2   3     20.1    42.4    51.1  1932.  139.  10.3   .906   .906   61.
  642.85    8.675   48.2   1.03   11.26    .51  16.2   3     20.7    43.3    52.1  1956.  140.  10.2   .908   .908   62.
  643.85    8.689   48.8    .88   11.98    .52  16.2   3     21.3    40.8    48.7  1961.  130.  11.1   .917   .917   59.
  644.85    8.702   49.5   1.03   11.20    .51  16.2   3     21.9    45.1    54.0  2001.  142.  10.2   .912   .912   62.
  645.84    8.716   50.2   1.03   11.16    .50  16.2   3     22.6    46.1    55.0  2025.  143.  10.1   .914   .914   63.
  646.85    8.730   50.7    .73   12.64    .52  16.2   3     23.0    39.8    47.3  2018.  123.  11.9   .926   .926   56.
  647.84    8.744   51.1    .59   13.45    .53  16.1   3     23.4    37.1    43.9  2019.  114.  12.7   .933   .933   53.
  648.84    8.758   51.7    .88   11.78    .51  16.1   3     24.0    44.7    53.0  2065.  135.  10.8   .923   .923   60.
  649.85    8.773   52.2    .73   12.51    .52  16.1   3     24.5    41.8    49.5  2072.  125.  11.7   .928   .928   57.
  650.85    8.787   52.5    .44   14.32    .55  16.1   3     24.8    35.3    41.4  2054.  106.  13.4   .942   .942   51.
  651.84    8.802   52.1   -.59   22.01   1.10  16.1   3     24.4    10.4    13.3  1979.   35.  19.2   .970   .970   27.
  652.84    8.816   51.6   -.73   23.49   1.46  16.1   3     23.9     6.8     9.3  1960.   25.  20.0   .970   .970   24.
  653.85    8.831   51.1   -.73   23.73   1.49  16.2   3     23.4     6.4     8.9  1941.   24.  20.2   .970   .970   23.
  654.83    8.845   51.0   -.15   18.53    .72  16.2   3     23.3    19.8    23.6  1953.   64.  17.0   .962   .962   36.
  655.83    8.859   51.0   0.00   17.35    .66  16.2   3     23.3    23.3    27.6  1963.   74.  16.1   .958   .958   40.
  656.80    8.873   51.1    .15   16.26    .61  16.2   3     23.4    26.9    31.7  1982.   84.  15.3   .950   .950   43.
  657.80    8.887   51.4    .44   14.47    .55  16.2   3     23.7    34.0    40.0  2013.  104.  13.6   .941   .941   50.
  658.80    8.901   51.7    .44   14.43    .55  16.2   3     24.0    34.3    40.4  2024.  105.  13.5   .941   .941   50.
  659.80    8.916   52.0    .44   14.39    .55  16.1   3     24.3    34.7    40.6  2035.  105.  13.5   .942   .942   50.
  660.82    8.930   52.2    .29   15.24    .57  16.1   3     24.5    31.4    36.9  2034.   95.  14.3   .946   .946   47.
  661.82    8.945   52.5    .44   14.32    .55  16.1   3     24.8    35.3    41.4  2054.  106.  13.4   .942   .942   51.
  662.82    8.959   52.8    .44   14.26    .55  16.1   3     25.1    35.6    41.9  2065.  107.  13.4   .942   .942   51.
  663.79    8.974   52.7   -.15   18.16    .71  16.1   3     25.0    21.4    25.4  2017.   66.  16.8   .963   .963   37.
  664.77    8.988   52.6   -.15   18.20    .71  16.1   3     24.9    21.3    25.3  2013.   66.  16.8   .963   .963   37.
  665.77    9.003   52.3   -.44   20.74    .90  16.2   3     24.6    14.1    17.3  1987.   46.  18.4   .970   .970   30.
  666.77    9.017   52.3   0.00   17.13    .65  16.2   3     24.6    24.[illegible]    29.0  2012.   76.  16.0   .958   .958   40.
  667.75    9.031   52.4    .15   16.06    .61  16.2   3     24.7    28.3    33.3  2029.   66.  15.1   .952   .952   44.
  668.73    9.046   52.5    .15   16.04    .61  16.2   3     24.6    28.4    33.4  2033.   86.  15.1   .952   .952   44.
  669.74    9.060   52.7    .29   15.18    .57  16.2   3     25.0    31.9    37.6  2052.   96.  14.3   .946   .946   47.
  670.74    9.075   52.7   0.00   17.03    .65  16.2   3     25.0    25.0    29.5  2026.   76.  15.9   .958   .958   41.
  671.74    9.090   52.4   -.44   20.72    .90  16.2   3     24.7    14.2    17.4  1990.   46.  18.4   .970   .970   31.
  672.74    9.104   52.1   -.44   20.78    .90  16.2   3     24.4    14.0    17.1  1979.   45.  18.4   .970   .970   30.
  673.73    9.118   51.7   -.59   22.13   1.11  16.2   3     24.0    10.1    12.9  1964.   35.  19.3   .970   .970   27.
  674.73    9.133   51.1   -.88   26.31   2.32  16.2   3     23.4     3.0     5.2  1941.   14.  21.7   .970   .970   20.
  675.73    9.147   50.5   -.88   26.66   2.45  16.2   3     22.8     2.6     4.6  1923.   13.  21.9   .970   .970   19.
  676.73    9.161   50.1   -.59   22.63   1.17  16.2   3     22.5     9.0    11.7  1903.   32.  19.5   .970   .970   26.
  677.73    9.175   49.8   -.44   21.31    .95  16.2   3     22.2    12.2    15.1  1892.   42.  18.7   .970   .970   29.
  678.71    9.188   49.7   -.15   18.75    .73  16.2   3     22.1    18.7    22.3  1904.   62.  17.2   .962   .962   36.
  679.68    9.202   49.6   -.15   18.77    .73  16.2   3     22.0    18.6    22.2  1901.   61.  17.2   .962   .962   36.
  680.66    9.215   49.5   -.15   18.73    .74  16.2   3     21.9    18.5    22.1  1897.   61.  17.2   .962   .962   35.
  681.66    9.229   49.5   0.00   17.56    .67  16.2   3     21.9    21.9    26.0  1908.   72.  16.4   .956   .956   39.
  682.67    9.243   49.7    .29   15.52    .58  16.2   3     22.1    28.6    33.8  1941.   92.  14.7   .944   .944   46.
  683.67    9.257   50.0    .44   14.63    .55  16.2   3     22.4    32.4    38.3  1963.  102.  13.8   .939   .939   49.
  684.68    9.271   50.2    .29   15.47    .56  16.2   3     22.6    29.2    34.4  1960.   92.  14.6   .944   .944   46.
  685.68    9.285   50.6    .59   13.50    .54  16.2   3     22.9    36.5    43.2  2002.  113.  12.7   .932   .932   53.
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10/01/76                                     VEHICLE PERFORMANCE SIMULATION                                          PAG
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                                   DRIVING SCHEDULE ( HDC002 )        USING ROUTE ( LEVEL  )
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                               INST         CUM
  SEC.     MILES    MPH    ACC    MPG    BSFC  MPG GEAR    ROLD     HPW      HPE   RPM   TORQ    VAC      SR     ETA PCT.WOT
----------------------------------------------------------------------------------------------------------------------------

 686.66    9.299   51.1    .73   12.61    .52 16.2   3     23.4    40.4     47.9 2032.   124.   11.8    .927    .927    56.
 687.69    9.313   51.6    .73   12.56    .52 16.2   3     23.9    41.0     48.6 2051.   124.   11.8    .927    .927    57.
 688.69    9.327   51.9    .44   14.40    .55 16.2   3     24.2    34.6     40.6 2032.   105.   13.5    .941    .941    50.
 689.67    9.342   52.0    .15   15.13    .61 16.2   3     24.3    27.8     32.8 2015.    86.   15.1    .951    .951    44.
 690.64    9.356   52.1    .15   16.11    .61 16.2   3     24.4    27.9     32.9 2018.    86.   15.1    .951    .951    44.
 691.64    9.370   52.4    .44   14.33    .55 16.2   3     24.7    35.2     41.3 2050.   106.   13.4    .942    .942    51.
 692.65    9.385   52.9    .73   12.45    .52 16.2   3     25.2    42.7     50.5 2097.   126.   11.6    .930    .930    57.
 693.64    9.400   53.3    .59   13.24    .53 16.2   3     25.6    39.9     46.9 2096.   117.   12.4    .937    .937    55.
 694.64    9.414   53.7    .59   13.21    .53 16.2   3     26.0    40.4     47.4 2110.   118.   12.4    .938    .938    55.
 695.64    9.429   54.2    .73   12.35    .52 16.2   3     26.5    44.5     52.4 2143.   128.   11.4    .932    .932    53.
 696.64    9.444   54.5    .44   14.06    .54 16.2   3     26.9    37.7     44.2 2129.   109.   13.2    .944    .944    52.
 697.64    9.460   54.8    .44   14.02    .54 16.1   3     27.2    38.1     44.6 2140.   110.   13.1    .944    .944    52.
 698.65    9.475   55.0    .29   14.94    .56 16.1   3     27.4    34.6     40.6 2137.   100.   14.3    .949    .949    49.
 699.66    9.490   55.5    .73   12.25    .51 16.1   3     27.9    46.3     54.4 2168.   131.   11.3    .935    .935    59.
 700.65    9.506   55.9    .59   12.98    .52 16.1   3     28.4    43.4     50.7 2169.   122.   12.1    .941    .941    56.
 701.66    9.522   56.1    .29   14.85    .55 16.1   3     28.6    36.0     42.1 2177.   102.   13.9    .950    .950    50.
 702.67    9.537   56.3    .29   14.82    .55 16.1   3     28.8    36.2     42.4 2184.   102.   13.9    .950    .950    50.
 703.65    9.553   56.4    .15   15.47    .59 16.1   3     28.9    32.8     38.3 2175.    93.   14.6    .956    .956    47.
 704.63    9.568   56.5    .15   15.46    .59 16.1   3     29.0    32.9     38.4 2174.    93.   14.6    .956    .956    47.
 705.64    9.584   56.7    .29   14.77    .55 16.1   3     29.3    36.7     42.9 2199.   103.   13.8    .950    .950    50.
 706.65    9.600   56.9    .29   14.74    .55 16.1   3     29.5    37.0     43.2 2206.   103.   13.8    .951    .951    50.
 707.63    9.615   57.0    .15   15.40    .58 16.1   3     29.6    33.5     39.1 2197.    94.   14.5    .956    .956    47.
 708.63    9.631   57.3    .44   13.67    .53 16.1   3     30.0    41.4     48.4 2232.   114.   12.8    .946    .946    54.
 709.62    9.647   57.7    .59   12.78    .52 16.1   3     30.4    45.9     53.5 2256.   125.   11.8    .943    .943    57.
 710.63    9.663   58.2    .73   12.03    .51 16.1   3     31.0    50.3     58.7 2282.   135.   10.9    .940    .940    61.
 711.63    9.680   58.8    .88   11.29    .50 16.1   3     31.7    55.2     64.6 2319.   146.   10.0    .935    .935    65.
 712.63    9.696   59.1    .44   13.45    .53 16.1   3     32.1    43.9     51.2 2298.   117.   12.6    .948    .948    55.
 713.61    9.712   59.2    .15   15.18    .57 16.1   3     32.2    36.2     42.2 2278.    97.   14.3    .958    .958    49.
 714.59    9.728   59.1   -.15   16.46    .67 16.1   3     32.1    28.0     32.9 2256.    77.   15.9    .966    .966    42.
 715.59    9.744   58.8   -.44   17.99    .84 16.1   3     31.7    19.9     24.6 2234.    56.   17.6    .970    .970    35.
 716.59    9.761   58.5   -.44   18.09    .85 16.1   3     31.4    19.6     23.6 2222.    56.   17.6    .970    .970    35.
 717.58    9.777   58.1   -.59   19.36    .98 16.1   3     30.9    15.3     18.9 2207.    45.   18.4    .970    .970    31.
 718.57    9.793   57.7   -.59   19.56    .99 16.1   3     30.4    14.9     18.5 2192.    44.   18.5    .970    .970    31.
 719.57    9.809   57.3   -.59   19.75    .99 16.1   3     30.0    14.6     18.1 2177.    44.   18.5    .970    .970    31.
 720.58    9.825   57.1   -.29   17.74    .76 16.1   3     29.7    32.2     26.3 2170.    64.   17.0    .970    .970    37.
 721.58    9.841   56.9   -.44   18.72    .85 16.1   3     29.4    18.0     21.8 2158.    53.   17.8    .970    .970    34.
 722.58    9.856   56.5   -.44   18.85    .86 16.1   3     29.0    17.7     21.4 2146.    52.   17.9    .970    .970    33.
 723.58    9.872   56.2   -.44   18.97    .87 16.1   3     28.7    17.5     21.1 2135.    52.   17.9    .970    .970    33.
 724.58    9.887   55.5  -1.03   26.79   2.99 16.1   3     27.9     1.9      4.3 2108.    11.   21.7    .970    .970    19.
 725.58    9.903   54.6  -1.32   38.36  10.99 16.1   3     27.7    -5.1     -3.2 1889.    -9.   23.3   1.065    .939    12.
 726.56    9.918   54.1   -.73   22.62   1.31 16.1   3     26.4     8.5     11.3 2055.    29.   19.6    .970    .970    25.
 727.55    9.932   53.7   -.59   21.41   1.06 16.2   3     26.0    11.6     14.7 2040.    35.   19.0    .970    .970    28.
 728.56    9.947   53.2   -.73   22.93   1.36 16.2   3     25.5     7.8     10.6 2021.    27.   19.7    .970    .970    25.
 729.56    9.962   52.9   -.44   20.54    .89 16.2   3     25.2    14.6     17.9 2009.    47.   18.3    .970    .970    31.
 730.55    9.977   52.5   -.59   21.90   1.09 16.2   3     24.8    10.7     13.6 1994.    36.   19.1    .970    .970    27.
 731.55    9.991   52.0   -.73   23.33   1.43 16.2   3     24.3     7.0      9.6 1975.    26.   19.9    .970    .970    24.
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   10/01/76                                  VEHICLE PERFORMANCE SIMULATION                                          PAG
   --------                                  ------------------------------                                          ---

                                    DRIVING SCHEDULE ( HDC002 )          USING ROUTE ( LEVEL   )
                                    ----------------                     -----------

                                      INST          CUM
   SEC.     MILES     MPH    ACC      MPG    BSFC   MPG GEAR    RDLD     HPW     HPE   RPM  TORQ    VAC     SR    ETA PCT.WOT
--------------------------------------------------------------------------------------------------------------------------

  732.55    10.005    51.3 -1.03    32.93    7.92  16.2   3     23.6     -.4     1.2 1744.    4.   22.5  1.084   .923   15.
  733.55    10.020    50.5 -1.17    37.35   99.99  16.2   3     23.3    -3.6    -1.9 1706.   -6.   23.1  1.091   .917   12.
  734.55    10.034    49.5 -1.47    56.71   99.99  16.2   3     23.3    -9.8    -7.6 1659.  -25.   24.1  1.100   .909    5.
  735.55    10.047    48.5 -1.47    62.09   99.99  16.2   3     22.5   -10.0    -8.0 1613.  -26.   24.2  1.108   .902    4.
  736.55    10.060    47.6 -1.32    50.73   99.99  16.2   3     21.3    -7.3    -5.5 1572.  -18.   23.7  1.116   .896    7.
  737.55    10.074    46.8 -1.17    42.65   99.99  16.3   3     20.2    -4.7    -3.0 1536.  -10.   23.2  1.123   .890    9.
  738.55    10.086    45.6 -1.76    94.44   99.99  16.3   3     20.9   -11.9    -9.8 1479.  -35.   24.5  1.136   .880    0.
  739.55    10.099    44.2 -2.05    91.86   99.99  16.3   3     20.5   -10.9    -6.4 1410.  -33.   24.3  1.155   .866    0.
  740.56    10.111    42.5 -2.49    88.69   99.99  16.3   3     20.3    -9.8    -7.9 1329.  -31.   24.1  1.178   .849    0.
  741.56    10.122    40.2 -3.37    94.33   99.99  16.3   3     20.7    -8.4    -6.6 1225.  -28.   23.8  1.210   .827    0.
  742.56    10.133    36.7 -5.13    78.34   99.99  16.3   3     21.9    -3.6    -2.9 1012.  -15.   22.4  1.337   .746    0.
  743.56    10.143    32.0 -6.89    68.99   99.99  16.4   3     21.6    -2.5    -1.3  900.   -7.   21.6  1.310   .763    0.
  744.56    10.151    28.0 -5.87    60.35   99.99  16.4   3     16.5    -2.1    -1.3  900.   -7.   21.5  1.147   .872    0.
  745.56    10.158    24.5 -5.13    52.91   99.99  16.4   3     13.0    -1.9    -1.3  900.   -7.   21.6  1.003   .997    0.
  746.56    10.165    21.5 -4.40    46.34   99.99  16.4   3     10.1    -1.7    -1.3  900.   -7.   21.6   .880   .880    0.
  747.56    10.170    19.5 -2.93    42.03   99.99  16.4   3      7.3    -1.5    -1.3  900.   -7.   21.6   .799   .799    0.
  748.57    10.176    17.4 -3.08    37.51   99.99  16.4   2      6.5    -2.0    -1.3  900.   -7.   21.6  1.083   .923    0.
  749.58    10.180    15.1 -3.37    32.55   99.99  16.4   2      5.8    -1.7    -1.3  900.   -7.   21.6   .940   .940    0.
  750.58    10.184    12.4 -3.96    26.73   99.99  16.4   2      5.1    -1.4    -1.3  900.   -7.   21.6   .772   .772    0.
  751.58    10.187     9.7 -3.96    20.91   99.99  16.4   2      3.9    -1.1    -1.3  900.   -7.   21.5   .604   .604    0.
  752.59    10.189     7.0 -3.96    15.09   99.99  16.4   1      2.8    -1.3    -1.3  900.   -7.   21.6   .722   .722    0.
  753.59    10.191     5.0 -2.93    10.78   99.99  16.4   1      1.7     -.9    -1.3  900.   -7.   21.6   .516   .516    0.
  754.59    10.192     3.3 -2.49     7.11   99.99  16.4   1      1.0     -.6    -1.3  900.   -7.   21.6   .341   .341    0.
  755.59    10.193     2.0 -1.91     4.31   99.99  16.4   1       .5     -.4    -1.3  900.   -7.   21.6   .206   .206    0.
  756.59    10.193      .7 -1.91     1.51   99.99  16.4   1       .2     -.1    -1.3  900.   -7.   21.6   .072   .072    0.
  757.58    10.193     0.0 -1.03     0.00    6.86  16.4   1      0.0      .0      .7  900.    4.   21.1  -.000  -.000    5.
  758.58    10.193     0.0  0.00     0.00    6.86  16.4   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000    5.
  759.58    10.193     0.0  0.00     0.00    6.86  16.4   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000    5.
  760.58    10.193     0.0  0.00     0.00    6.86  16.4   1      0.0     0.0      .7  900.    4.   21.1  0.000  0.000    5.
```

```
SHIFT FREQUENCY DATA                                             10/01/76
--------------------

 TOTAL SHIFTS  =     6     SHIFTS PER MILE  =    .6     NUMB GEARS  =  3

 GEAR INTO     1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20
 UPSHIFTS      0  1  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 DOWNSHIFTS    1  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

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          VEHICLE PERFORMANCE SIMULATION    10/01/76
          ******************************************

RUN TITLE = CASE B(A)   GMC 35C, AUTO, 5000-LB CLASS, FTP HIWAY, 3.08 IN

SCHEDULE AVERAGES      FUEL ECONOMY       = 16.37 MPG
                       WORK PER MILE      =   .59 HP-HR/MI
                       AVG SP FUEL CONS   =   .64 LBS/HP-HR
                       AVG SPEED          = 48.2  MPH

TOTALS                        TOTAL              PERCENT OF TOTAL
          VARIABLE  (UNITS)   AMOUNT  (CRUISE  ACCEL   DECEL    IDLE )  (BRAKES)
          --------  -------   ------  -------  ------  ------   ------  ------
          TIME      (SECS)    760.6    16.3    44.1    36.8      .8
          DISTANCE  (MILES)    10.2    17.9    43.3    38.8     0.0
          ENERGY    (HP-HR)     5.97   17.4    61.0    21.7      .0
          FUEL      (LBS)       3.85   17.5    52.9    29.4      .2       .9

ENERGY SUPPLY                                    HP-HR
                                                 -----
                    (1) ENGINE                =  5.97
                    (2) KINETIC ENERGY        =  0.00
                    (3) POTENTIAL ENERGY      =  0.00
                    (4) ROTATING INERTIA      =  0.00

BREAKDOWN                              PERCENT ENGINE HP-HR
                                       --------------------
                    (1) ACCESSORIES           =    7.46
                    (2) TORQUE CONVERTER      =    5.84
                    (3) GEAR BOX              =     .04
                    (4) DIFFERENTIAL          =    3.56
                    (5) TIRE SLIP             =    5.98
                                   3+4+5      =    9.58
                                 2+3+4+5      =   15.42
                    (6) AERODYNAMIC DRAG      =   34.64
                    (7) ROLLING RESIST        =   37.61
                           SUBTOTAL 1- 7      =   95.12
                    (8) BRAKES                =    3.60
                    (9) ENGINE MOTORING       =    1.30
                           SUBTOTAL 1- 9      =  100.02
                   (10) OTHER ENERGY          =    0.00
                                TOTAL 1-10    =  100.02

ADDITIONAL RUN DATA

  DRIVING SCHEDULE NAME = HDC002        ROUTE NAME                = LEVEL
  VEHICLE NAME          = V5000B        ENGINE NAME               = GM350M
  CONVERTER NAME        = CODY2         SHIFT LOGIC NAME          = TEST2
  WEIGHT (LBS)          =  5000.        STROKE (INCHES)           =    3.48
  DISPLACEMENT (CU IN)  =   349.8       REAR AXLE RATIO           =    3.08
  WIND VELOCITY (MPH)   =     0.0       FUEL DENSITY (LB/GAL)     =    6.18
  AERO DRAG  = 24.20 ,  .48             TIRES  =  12.00 ,  .09 ,  .93
```

```
          S C O P E   L O A D   M A P                                   LOADER VERSION 1.0   10/01/76  15.49.01   PAGE   1
PROGRAM  WILL BE ENTERED AT  VSIMI      ( 37412)                        SCM LENGTH     51334           LCM LENGTH        0

          BLOCK           ADDRESS    LENGTH

           /SGDATA/          100      37201
           /PARM/          37301          2
          VSIMI            37303        130
           /RESULT/        37433         13
           /CDDATA/        37446        675
          AIR              40343        155
          CYCLE            40520        107
          CYHEAD           40627         53
          FIND             40702         31
          ICARB            40733         54
          IDIST            41007         54
          PCISUM           41063         36
          SPARK            41121         67
          TCUT             41210         60
           /SKALE/         41270          5
          CARDCD           41275       1217
          SCALC            42514         65
          SCALE            42601        331
          ABORT            43132         74
          ABORT1           43226         21
          ABORT2           43247         25
          ABORT3           43274         26
          ABORT4           43322         26
          ABORT5           43350         27
          ABORT6           43377         27
          ABORT7           43426         23
          ABORT8           43451         25
          ABORT9           43476         26
          ABORTA           43524         26
          HTOMIN           43552         14
           /Q8.IO./        43566        120
          FORSYS=          43706        624
          BACKSP=          44532         46
           /IOCON./        44600         42
          COMIO=           44642         55
          ENDFIL=          44717         45
          EOF              44764         15
          FLTIN=           45001        153
          FLTOUT=          45154        313
          FMTAP=           45467        365
          GETFIT=          46054         35
          INCOM=           46111        247
           /IO.BUF./       46360        227
          INPB=            46607        313
          INPC=            47122        200
          KODER=           47322        471
          KRAKER=          50013        442
          OUTB=            50455        207
          OUTC=            50664        173
          OUTCOM=          51057        170
          CLOCK=           51247         50
          GOTOER=          51317         14
          SYSAID=          51333          1
```

```
PROGRAM VSIMI, TO ADD AIR FLOW INFORMATION TO OUTPUT FROM DOT PROGRAM VEHSIM
RUN ON  10/01/76  AT  15.49.07

THE CARBURETOR PART NAME IS  GM350
ENGINE DISPLACEMENT IS            350.00000 CUBIC INCHES
CARBURETOR COMMENTS ARE       REFERENCE VEHICLE   GMC 350 CID 8 CYL-2BBL

CARBURETOR DATA ARE


 SPEED POINT  RPM     1034.483
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
 CARB DATA    AFR       15.000    15.000    15.500    15.900    15.700    15.250    14.000    12.800    12.500    13.000

 SPEED POINT  RPM     1206.897
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
 CARB DATA    AFR       15.000    15.000    16.200    16.400    16.000    15.200    13.900    12.800    12.600    13.000

 SPEED POINT  RPM     1379.310
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   104.000
 CARB DATA    AFR       15.400    15.400    16.500    16.500    16.200    15.300    14.100    13.100    12.700    13.200

 SPEED POINT  RPM     1724.138
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   113.000
 CARB DATA    AFR       15.900    15.900    16.300    16.300    16.200    15.750    15.100    14.250    13.400    13.300

 SPEED POINT  RPM     2068.966
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   114.000
 CARB DATA    AFR       16.250    16.250    15.800    15.800    15.750    15.700    15.300    14.700    13.700    13.[illegible]00

 SPEED POINT  RPM     2413.793
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   112.000
 CARB DATA    AFR       16.000    16.000    16.000    15.700    15.700    15.600    15.250    14.700    13.800    13.500

 SPEED POINT  RPM     2758.621
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   109.000
 CARB DATA    AFR       16.000    16.000    16.000    15.900    15.700    15.700    15.400    14.700    13.700    13.700

 SPEED POINT  RPM     3103.448
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   103.000
 CARB DATA    AFR       16.000    16.000    16.000    16.000    16.000    16.000    15.400    14.500    13.700    13.000

 SPEED POINT  RPM     3448.276
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
 CARB DATA    AFR       16.000    16.000    16.000    16.000    16.000    16.000    15.400    14.100    13.600    13.000

 SPEED POINT  RPM     3793.103
 LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    92.000
 CARB DATA    AFR       16.000    16.000    16.000    16.000    15.000    16.000    15.000    13.800    13.000    13.000
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THE DISTRIBUTOR PART NAME IS  GM350
DISTRIBUTOR COMMENTS ARE     REFERENCE VEHICLE   GMC 350 CID 8 CYL-2BBL

DISTRIBUTOR DATA ARE

 SPEED POINT   RPM     1034.483
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
 DIST DATA     DEG       21.000     21.000    20.900    19.400    16.800    13.500    10.000     6.600     4.400     4.000

 SPEED POINT   RPM     1206.897
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   101.000
 DIST DATA     DEG       22.400     22.400    23.000    22.000    19.300    16.000    12.400     9.200     7.400     7.000

 SPEED POINT   RPM     1379.310
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   105.000
 DIST DATA     DEG       24.200     24.200    25.100    24.100    22.000    19.000    15.300    12.200    10.000     8.700

 SPEED POINT   RPM     1724.138
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   112.000
 DIST DATA     DEG       29.000     29.000    29.900    29.500    29.000    25.700    22.300    18.700    15.200    13.000

 SPEED POINT   RPM     2068.966
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   114.000
 DIST DATA     DEG       33.200     33.200    34.200    34.100    32.800    30.500    27.200    23.600    20.000    16.600

 SPEED POINT   RPM     2413.793
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   112.000
 DIST DATA     DEG       36.000     36.000    36.400    35.900    34.300    32.000    28.900    25.200    21.900    18.500

 SPEED POINT   RPM     2758.621
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   108.000
 DIST DATA     DEG       37.000     37.000    38.200    37.800    36.200    33.800    30.300    26.900    23.600    20.600

 SPEED POINT   RPM     3103.448
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   103.000
 DIST DATA     DEG       38.900     38.900    39.500    38.500    36.500    34.000    31.000    28.000    25.000    22.000

 SPEED POINT   RPM     3448.276
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
 DIST DATA     DEG       40.700     40.700    40.800    39.200    36.800    34.000    31.200    28.700    26.000    23.500

 SPEED POINT   RPM     3793.103
 LOAD POINT    BMEP       1.000     10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    92.000
 DIST DATA     DEG       42.000     42.000    42.200    40.300    39.000    34.900    31.700    28.400    25.400    25.300
 THE ABOVE ENGINE MAPS HAVE BEEN USED AS INPUT, WITHOUT SCALING
```

SAMPLED DATA FROM DRIVING CYCLE (TAPE19)

CUMT	CUMD	CUMFU	HPE	RPME	TURQE	VAC	PCT THR	SEG
1.0000	0.0000	.0013	.6885	900.0000	4.0175	21.0982	4.6429	1
50.1315	.4113	.2145	39.1159	1677.1554	122.4912	11.6649	56.3512	50
99.7392	1.0441	.4616	36.6573	1921.1213	100.2144	14.0056	46.5392	100
149.5422	1.6841	.6898	27.8867	1744.7378	83.9444	15.5473	42.9955	150
199.3989	2.3068	.9002	13.4849	1648.9250	42.9508	18.8179	26.6272	200
249.0926	2.9265	1.1273	24.4614	1853.0516	69.3297	16.5880	36.1186	250
299.2720	3.5113	1.3052	79.0003	2209.9793	187.7436	6.2322	76.0068	300
349.0926	4.2055	1.6424	32.6544	2246.4375	76.2756	15.9548	41.5278	350
398.9471	4.9958	1.9433	53.2237	2243.2667	124.3317	11.8693	57.2987	400
448.4817	5.7995	2.2597	31.6446	2216.5186	74.9136	16.0643	46.9702	450
498.0313	6.5759	2.5450	27.4837	2087.6074	69.1433	16.5142	38.5817	500
547.6098	7.3351	2.8329	24.6346	2113.4660	61.2175	17.1706	36.0685	550
597.3368	8.0446	3.0656	13.6586	1823.3026	39.3434	19.0280	27.8955	600
646.8469	8.7303	3.3374	47.2761	2017.8647	123.0531	11.8597	36.1240	650
696.6409	9.4445	3.6107	44.2105	2128.5761	109.0638	13.1810	51.8881	700
746.5575	10.1647	3.8331	-1.2638	900.0000	-7.3750	21.6000	0.0000	750

```
SAMPLED RESULTS FROM VSIMI COMPUTATIONS
       BMEP      FUINC     AIRINC      AFRAT        ADV      FWAFR      FWADV     CUMAIR      CUMFU      FLOW      SEG
                 (LB)       (LB)                  (DEG)                 (DEG)       (LB)       (LB)  (LB/MIN)

     1.7310      .0013      .0197    15.0000    21.0000    15.0000    21.0000      .0197      .0013    1.1802        1
    52.7762      .0057      .0909    15.0580    26.5175    15.8674    23.9666     3.4031      .2145    5.4691       50
    43.1781      .0057      .0907    15.9917    31.7166    15.9947    27.3277     7.3836      .4616    5.4425      100
    36.1680      .0048      .0778    16.2701    29.9792    15.9353    27.9584    10.9925      .6898    4.6162      150
    18.5056      .0035      .0559    16.0260    28.3358    15.9674    28.3269    14.3733      .9002    3.3157      200
    29.8712      .0046      .0747    16.1125    31.5015    15.9913    28.5973    18.0266     1.1273    4.4803      250
    80.8907      .0124      .1909    14.6146    23.9446    15.9601    28.5926    20.8306     1.3052   10.8676      300
    32.8639      .0060      .0951    15.8594    35.2568    15.9064    28.9447    26.1255     1.6424    5.8361      350
    53.5692      .0076      .1196    15.6969    32.7590    15.8942    29.8102    30.8873     1.9433    7.2181      400
    32.2771      .0059      .0929    15.6571    35.0919    15.8811    30.5376    35.8864     2.2597    5.7303      450
    29.7909      .0052      .0827    15.8153    34.3088    15.8758    30.9701    40.4046     2.5450    5.0756      500
    26.3760      .0053      .0844    15.8968    34.3167    15.8634    31.3172    44.9536     2.8329    5.0085      550
    16.9514      .0038      .0610    16.0547    30.5306    15.8767    31.4162    48.6710     3.0656    3.6572      600
    53.0183      .0069      .1083    15.7837    31.3945    15.8664    31.3231    52.9522     3.3374    6.4708      650
    46.8995      .0066      .1045    15.7538    33.4649    15.8675    31.4187    57.2929     3.6107    6.2578      700
    -3.1776      .0008      .0119    15.0000    21.0000    15.8647    31.5101    60.8111     3.6331     .7162      750


AT THE END OF THE CYCLE, AFTER  765 SEGMENTS

THE FINAL FUEL-WEIGHTED AIR-TO-FUEL RATIO IS  15.86
THE FINAL FUEL-WEIGHTED SPARK ADVANCE IS      31.48 DEGREES
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          S C O P E   L O A D   M A P                              LOADER VERSION 1.0   10/31/76  15.49.06   PAGE   1
PROGRAM  WILL BE ENTERED AT  VSIMI       ( 37412)                   SCM LENGTH     51334            LCM LENGTH       0

          BLOCK          ADDRESS     LENGTH

           /SGDATA/          100      37201
           /PARM/          37301          2
          VSIMI            37303        130
           /RESULT/        37433         13
           /CODATA/        37446        675
          AIR              40343        155
          CYCLE            40520        107
          CYHEAD           40627         53
          FIND             40702         31
          ICARB            40733         54
          IDIST            41007         54
          PCISUM           41063         35
          SPARK            41121         67
          TCLT             41210         60
           /SKALE/         41270          5
          CARDCD           41275       1217
          SCALC            42514         65
          SCALE            42601        331
          ABORT            43132         74
          ABORT1           43226         21
          ABORT2           43247         25
          ABORT3           43274         26
          ABORT4           43322         26
          ABORT5           43350         27
          ABORT6           43377         27
          ABORT7           43426         23
          ABORT8           43451         25
          ABORT9           43476         26
          ABORTA           43524         26
          HTCMIN           43552         14
           /GF.IO./        43566        120
          FORSYS=          43706        624
          BACKSP=          44532         46
           /IOCON./        44600         42
          COMIO=           44642         55
          ENDFIL=          44717         45
          EOF              44764         15
          FLTIN=           45001        153
          FLTOUT=          45154        313
          FMTAP=           45467        365
          GETFIT=          46054         35
          INCOM=           46111        247
           /IO.BUF./       46360        227
          INPB=            46607        313
          INPC=            47122        200
          KODER=           47322        471
          KRAKER=          50013        442
          OUTB=            50455        207
          OUTC=            50664        173
          OUTCOM=          51057        170
          CLOCK=           51247         50
          GOTOER=          51317         14
          SYSAID=          51333          1
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PROGRAM VSIM1, TO ADD AIR FLOW INFORMATION TO OUTPUT FROM DOT PROGRAM VEHSIM
RUN ON  10/01/76  AT  15.49.01

THE CARBURETOR PART NAME IS  GM350
ENGINE DISPLACEMENT IS          350.00000 CUBIC INCHES
CARBURETOR COMMENTS ARE       REFERENCE VEHICLE   GMC 350 CID 8 CYL-2BBL

CARBURETOR DATA ARE


 SPEED POINT   RPM     1034.483
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
 CARB DATA     AFR       15.000    15.000    15.500    15.900    15.700    15.250    14.000    12.800    12.500    13.000

 SPEED POINT   RPM     1206.897
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
 CARB DATA     AFR       15.000    15.000    16.200    16.400    16.000    15.200    13.900    12.800    12.600    13.000

 SPEED POINT   RPM     1379.310
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   104.000
 CARB DATA     AFR       15.400    15.400    16.500    16.500    16.200    15.300    14.100    13.100    12.700    13.200

 SPEED POINT   RPM     1724.138
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   113.000
 CARB DATA     AFR       15.900    15.900    16.300    16.300    16.200    15.750    15.100    14.250    13.400    13.300

 SPEED POINT   RPM     2068.966
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   114.000
 CARB DATA     AFR       16.250    16.250    15.800    15.300    15.750    15.700    15.300    14.700    13.700    13.300

 SPEED POINT   RPM     2413.793
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   112.000
 CARB DATA     AFR       16.000    16.000    16.000    15.700    15.700    15.600    15.250    14.700    13.800    13.500

 SPEED POINT   RPM     2758.621
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   109.000
 CARB DATA     AFR       16.000    16.000    16.000    15.800    15.700    15.700    15.400    14.700    13.700    13.700

 SPEED POINT   RPM     3103.448
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   103.000
 CARB DATA     AFR       16.000    16.000    16.000    16.000    16.000    16.000    15.400    14.500    13.700    13.000

 SPEED POINT   RPM     3448.276
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
 CARB DATA     AFR       16.000    16.000    16.000    16.000    16.000    16.000    15.400    14.100    13.600    13.000

 SPEED POINT   RPM     3793.103
 LOAD POINT    BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    92.000
 CARB DATA     AFR       16.000    16.000    16.000    16.000    16.000    16.000    15.000    13.900    13.000    13.000
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THE DISTRIBUTOR PART NAME IS  GM352
DISTRIBUTOR COMMENTS ARE      REFERENCE VEHICLE   GMC 350 CID 8 CYL-2BBL

DISTRIBUTOR DATA ARE


SPEED POINT  RPM     1034.493
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
DIST DATA    DEG       21.000    21.000    20.900    19.400    15.800    13.500    10.000     6.600     4.400     4.000

SPEED POINT  RPM     1206.897
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   101.000
DIST DATA    DEG       22.400    22.400    23.000    22.000    19.300    16.000    12.400     9.200     7.400     7.000

SPEED POINT  RPM     1379.310
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   105.000
DIST DATA    DEG       24.200    24.200    25.100    24.100    22.000    19.000    15.300    12.200    10.000     8.700

SPEED POINT  RPM     1724.138
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   112.000
DIST DATA    DEG       29.000    29.000    29.900    29.600    28.000    25.700    22.300    18.700    15.200    13.000

SPEED POINT  RPM     2068.966
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   114.000
DIST DATA    DEG       33.200    33.200    34.200    34.100    32.800    30.500    27.200    23.600    20.000    16.600

SPEED POINT  RPM     2413.793
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   112.000
DIST DATA    DEG       36.000    36.000    36.400    35.900    34.300    32.000    28.900    25.200    21.900    18.500

SPEED POINT  RPM     2758.621
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   108.000
DIST DATA    DEG       37.000    37.000    38.200    37.800    36.200    33.600    30.300    26.900    23.600    20.600

SPEED POINT  RPM     3103.448
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000   103.000
DIST DATA    DEG       38.900    38.900    39.500    38.500    36.500    34.000    31.000    28.000    25.000    22.000

SPEED POINT  RPM     3448.276
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    97.000
DIST DATA    DEG       40.700    40.700    40.800    39.200    36.600    34.000    31.200    28.700    26.000    23.500

SPEED POINT  RPM     3793.103
LOAD POINT   BMEP       1.000    10.000    30.000    40.000    50.000    60.000    70.000    80.000    90.000    92.000
DIST DATA    DEG       42.000    42.000    42.200    40.300    38.000    34.900    31.700    28.400    25.400    25.300
THE ABOVE ENGINE MAPS HAVE BEEN USED AS INPUT, WITHOUT SCALING
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SAMPLED DATA FROM DRIVING CYCLE (TAPE19)
        CUMT          CUMD          CUMFU           HPE        RPME          TORQE            VAC     PCT THR            SEG

      1.0000        0.0000          .0013          .6885    900.0000        4.0175        21.0882      4.6429              1
     50.0210         .1439          .1169         5.1944    906.6864       30.0884        19.4167     15.4261             50
    100.2701         .5024          .2631        23.1043   1365.1857       38.8845        15.1313     44.3509            100
    150.3638         .6753          .3484          .6885    900.0000        4.0175        21.0882      4.6429            150
    200.6858         .9182          .5692        73.1340   1980.7269      193.9187         5.5176     79.5803            200
    250.6566        1.6373          .8910        20.7154   2119.5892       51.3294        17.9755     32.8353            250
    300.3108        2.3659         1.1398        10.9129   1865.0866       30.7301        19.7273     25.1117            300
    350.1303        2.6355         1.2045        34.6387   1460.1325      125.3127        11.4000     57.6144            350
    400.1689        2.9987         1.3686          .6885    900.0000        4.0175        21.0882      4.6429            400
    450.2210        3.1440         1.4989        32.5031   1401.2849      121.8212        11.8369     56.4070            450
    500.2866        3.5803         1.6924        -1.2638    900.0000       -7.3750        21.6000      0.0000            500
    550.3432        3.7960         1.8075        -1.2638    900.0000       -7.3750        21.6000      0.0000            550
    600.0398        3.9403         1.9154        13.9399   1095.8285       66.8099        16.7573     33.9405            600
    650.1086        4.0575         2.0091        32.3439   1337.1780      127.0362        11.3484     58.3890            650
    700.0936        4.2291         2.1214        32.4980   1358.9353      125.5981        11.4734     57.8330            700
    750.3573        4.4797         2.2662         5.2484   1079.5360       25.5339        20.2220     17.5625            750
    800.1948        4.7614         2.3974        19.7892   1268.6323       77.7854        16.0317     40.0748            800
    849.6915        5.1541         2.5330        30.7093   1406.0474      114.7081        12.6042     53.8115            850
    899.8937        5.5370         2.6631         -.7466    900.0000       -4.3567        21.2470      1.2301            900
    950.0825        5.8811         2.7733        -1.2638    900.0000       -7.3750        21.6000      0.0000            950
   1000.1480        6.1493         2.9039        23.5010   1280.6081       96.3816        14.4067     47.0332           1000
   1050.1322        6.2736         2.9748          .6885    900.0000        4.0175        21.0882      4.6429           1050
   1100.1478        6.4819         3.0958          .6885    900.0000        4.0175        21.0882      4.6429           1100
   1150.0446        6.7569         3.2126        -1.2638    900.0000       -7.3750        21.6000      0.0000           1150
   1200.1073        6.8301         3.3115        21.9775   1164.0864       99.1556        13.9981     47.4992           1200
   1250.2564        7.0265         3.4112          .6885    900.0000        4.0175        21.0882      4.6429           1250
   1300.3947        7.2548         3.5509        21.2359   1310.1581       85.1277        15.3989     42.3855           1300
   1350.4079        7.3706         3.6485        10.4512   1024.5973       53.5564        17.7512     27.4051           1350
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SAMPLED RESULTS FROM VSIMI COMPUTATIONS
      BMEP      FUINC     AIRINC      AFRAT       ADV       FWAFR      FWADV     CUMAIR      CUMFU      FLOW      SEG
                (LP)      (LB)                   (DEG)                 (DEG)      (LB)       (LB)    (LB/MIN)

     1.7310     .0013     .0197     15.0000     21.0000    15.0000    21.0000      .0197      .0013     1.1802       1
    12.9638     .0019     .0288     15.0741     20.9852    15.4508    21.6496     1.8053      .1168     1.7643      50
    38.2965     .0040     .0653     16.4890     24.0983    15.6741    22.2280     4.1235      .2631     3.9027     100
     1.7310     .0013     .0197     15.0000     21.0000    15.6547    22.2709     5.4547      .3484     1.1802     150
    83.5513     .0119     .1692     14.2434     21.0768    15.3407    22.0368     8.7323      .5692    10.1486     200
    22.1157     .0053     .0804     15.9807     34.1633    15.4565    25.2954    13.7714      .8910     4.8261     250
    13.2403     .0037     .0[illegible]1     16.0516     30.8692    15.5499    26.8828    17.7241     1.1398     3.5647     300
    53.9919     .0046     .0738     15.8828     22.2742    15.5386    26.6428    18.7163     1.2045     4.4253     350
     1.7310     .0013     .0197     15.0000     21.[illegible]00    15.5566    26.2653    21.2904     1.3686     1.1302     400
    52.4876     .0044     .0698     15.9833     2[illegible].[illegible]472    15.5165    25.8077    23.2577     1.4989     4.1890     450
    -3.1776     .0009     .0119     15.0000     2[illegible].0000    15.4957    25.4726    26.2255     1.6924      .7162     500
    -3.1776     .0009     .0121     15.0000     21.0000    15.5107    25.2445    28.0359     1.8075      .7162     550
    28.7855     .0030     .0470     15.7036     21.6381    15.5143    25.0465    29.7153     1.9154     2.7921     600
    54.7344     .0043     .0682     15.7366     19.8852    15.5132    24.8731    31.1676     2.0091     4.0859     650
    54.1148     .0046     .0724     15.8109     20.4319    15.5209    24.7098    32.9254     2.1214     4.3513     700
    11.0015     .0022     .0325     15.0342     21.3700    15.5433    24.5528    35.2244     2.2662     1.9297     750
    33.5144     .0036     .0581     16.3525     23.4005    15.5513    24.4337    37.2829     2.3974     3.4589     800
    49.4228     .0046     .0744     16.2164     22.5842    15.5621    24.3539    39.4196     2.5330     4.4758     850
    -1.8771     .0013     .0152     15.0000     21.0000    15.5758    24.2635    41.4803     2.6631      .9161     900
    -3.1776     .0009     .0119     15.0000     21.0000    15.5738    24.1569    43.1914     2.7733      .7162     950
    41.5267     .0041     .0672     16.3882     22.5248    15.5757    24.0578    45.2299     2.9039     3.7894    1000
     1.7310     .0013     .0197     15.0000     21.0000    15.5682    23.9728    46.3128     2.9748     1.1802    1050
     1.7310     .0008     .0121     15.0000     21.0000    15.5714    23.9186    48.0501     3.0858      .7273    1100
    -3.1776     .0008     .0121     15.0000     21.0000    15.5764    23.8345    50.0411     3.2126      .7162    1150
    42.7219     .0034     .0555     16.1805     20.6263    15.5632    23.7461    51.5368     3.3115     3.3175    1200
     1.7310     .0013     .0197     15.0000     21.0000    15.5621    23.6819    53.0854     3.4112     1.1902    1250
    36.6779     .0037     .0610     16.4332     23.5899    15.5640    23.6023    55.2665     3.5509     3.6433    1300
    23.0752     .0025     .0387     15.3269     20.9346    15.5663    23.5544    56.7933     3.6495     2.2974    1350


 AT THE END OF THE CYCLE, AFTER 1372 SEGMENTS

 THE FINAL FUEL-WEIGHTED AIR-TO-FUEL RATIO IS  15.56
 THE FINAL FUEL-WEIGHTED SPARK ADVANCE IS      23.54 DEGREES
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REFERENCE

1. A Computer Program (VEHSIM) for Highway Vehicle Fuel Economy, Performance, and Other Parameters, Power and Propulsion Branch, Mechanical Engineering Division, Transportation Systems Center, U.S. Department of Transportation, draft dated January 1975.

GLOSSARY

BMEP	(engine load) brake mean effective pressure
BSFC	brake specific fuel consumption
CDC	Control Data Corporation
CID	cubic inch displacement
DOT	U.S. Department of Transportation
DSF	displacement sensitivity factor
DT	(delta time variable)
EPA	Environmental Protection Agency
HWFET	Highway Fuel Economy Test
mpg	miles per gallon
N/V	(speed ratio)
sfc	specific fuel consumption
SRSF	speed ratio sensitivity factor
TSC	Transportation Systems Center
TSF	transmission sensitivity factor
U/W	University of Wisconsin
VEHSIM	(Vehicle Performance Simulation Computer Model)
WTSF	weight sensitivity factor